

**Florida Department of Education
CTE Curriculum Frameworks**

Arts, A/V Technology & Communication

**Florida Department of Education
Curriculum Framework**

Course Title: **Arts, A/V Technology and Communication Directed Study**
Career Cluster: **Arts, A/V Technology and Communication**

Secondary – Career Preparatory

Course Number	8200400
CIP Number	0650999910
Grade Level	11-12
Course Length	Multiple credits
Teacher Certification	Refer to the Course Structure section.
CTSO	SkillsUSA
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this course is to provide students with learning opportunities in a prescribed program of study within the Arts, A/V Technology and Communication cluster that will enhance opportunities for employment in the career field chosen by the student.

Course Structure

The content is prescribed by the instructor based upon the individual student's assessed needs for directed study.

This course may be taken only by a student who has completed or is currently completing a specific secondary job preparatory program for additional study in this career cluster. A student may earn multiple credits in this course.

The selected standards and benchmarks, which the student must master to earn credit, must be outlined in an instructional plan developed by the instructor.

To teach the course listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary course structure:

Course Number	Course Title	Teacher Certification	Length	Level	Graduation Requirement
8200400	Arts, A/V Technology and Communication Directed Study	Any District Certification appropriate to the students' chosen career field ANY FIELD WHEN CERT REFLECTS BACHELOR OR HIGHER ANY CTE FIELD OR COVERAGE	Multiple credits	2	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate expertise in a specific occupation contained within the career cluster.
- 02.0 Conduct investigative research on a selected topic related to the career cluster using approved research methodology, interpret findings, and prepare presentation to defend results.
- 03.0 Apply enhanced leadership and professional career skills.
- 04.0 Demonstrate higher order critical thinking and reasoning skills appropriate for the selected program of study.

**Florida Department of Education
Student Performance Standards**

Course Title: Arts, A/V Technology and Communication Directed Study
Course Number: 8200400
Course Credit: 1

CTE Standards and Benchmarks	
01.0	Demonstrate expertise in a specific occupation within the career cluster. The student will be able to:
01.01	The benchmarks will be selected from the appropriate curriculum frameworks and determined by the instructor based upon the individual student's assessed needs.
02.0	Conduct investigative research on a selected topic related to the career cluster using approved research methodology, interpret findings, and prepare presentation to defend results. The student will be able to:
02.01	Select investigative study referencing prior research and knowledge.
02.02	Collect, organize and analyze data accurately and precisely.
02.03	Design procedures to test the research.
02.04	Report, display and defend the results of investigations to audiences that may include professionals and technical experts.
03.0	Apply enhanced leadership and professional career skills. The student will be able to:
03.01	Develop and present a professional presentation offering potential solutions to a current issue.
03.02	Enhance leadership and career skills through work-based learning including job placement, job shadowing, entrepreneurship, internship, or a virtual experience.
03.03	Participate in leadership development opportunities available through the appropriate student organization and/or other professional organizations.
03.04	Enhance written and oral communications through the development of presentations, public speaking, and live and/or virtual interviews.
04.0	Demonstrate higher order critical thinking and reasoning skills appropriate for the selected program of study. The student will be able to:
04.01	Use mathematical and/or scientific skills to solve problems encountered in the chosen occupation.
04.02	Read and interpret information relative to the chosen occupation.
04.03	Locate and evaluate key elements of oral and written information.
04.04	Analyze and apply data and/or measurements to solve problems and interpret documents.

04.05 Construct charts/tables/graphs using functions and data.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

Florida Department of Education
Curriculum Framework

Course Title: Arts, A/V Technology and Communication Cooperative Education - OJT
Course Type: Career Preparatory
Career Cluster: Arts, AV Technology and Communication

Secondary – Cooperative Education - OJT

Course Number	8200430
CIP Number	06509999CP
Grade Level	9-12
Course Length	Multiple credits
Teacher Certification	Refer to the Course Structure section.
CTSO	SkillsUSA
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, AV Technology and Communication cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, AV Technology and Communication cluster.

Each student job placement must be related to the job preparatory program in which the student is enrolled or has completed.

The purpose of this course is to provide the on-the-job training component when the **cooperative method of instruction** is appropriate. Whenever the cooperative method is offered, the following is required for each student: a training agreement; a training plan signed by the student, teacher and employer, including instructional objectives; a list of on-the-job and in-school learning experiences; a workstation which reflects equipment, skills and tasks which are relevant to the occupation which the student has chosen as a career goal; and a site supervisor with a working knowledge of the selected occupation. The workstation may be in an industry setting or in a virtual learning environment. The student **must be compensated** for work performed.

The teacher/coordinator must meet with the site supervisor a minimum of once during each grading period for the purpose of evaluating the student's progress in attaining the competencies listed in the training plan.

Arts, A/V Technology and Communication Cooperative Education OJT may be taken by a student for one or more semesters. A student may earn multiple credits in this course. The specific student performance standards which the student must achieve to earn credit are specified in the Cooperative Education - OJT Training Plan.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

To teach the course listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary course structure:

Course Number	Course Title	Teacher Certification	Length	Level	Graduation Requirement
8200430	Arts, A/V Technology and Communication Cooperative Education OJT	ANY FIELD WHEN CERT REFLECTS BACHELOR'S DEGREE OR HIGHER ANY CTE FIELD	Multiple Credits	2	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Perform designated job skills.
- 02.0 Demonstrate work ethics.

**Florida Department of Education
Student Performance Standards**

Course Title: Arts, A/V Technology and Communication Cooperative Education OJT
Secondary Number: 8200430

Standards and Benchmarks	
01.0	Perform designated job skills. The student will be able to:
01.01	Perform tasks as outlined in the training plan.
01.02	Demonstrate job performance skills.
01.03	Demonstrate safety procedures on the job.
01.04	Maintain appropriate records.
01.05	Attain an acceptable level of productivity.
01.06	Demonstrate appropriate dress and grooming habits.
02.0	Demonstrate work ethics. The student will be able to:
02.01	Follow directions.
02.02	Demonstrate good human relations skills on the job.
02.03	Demonstrate good work habits.
02.04	Demonstrate acceptable business ethics.

Additional Information

Special Notes

There is a **Cooperative Education Manual** available online that has guidelines for students, teachers, employers, parents and other administrators and sample training agreements. It can be accessed on the DOE website at: <http://fldoe.org/academics/career-adult-edu/career-tech-edu/additional-cte-programs-courses/diversified-edu.stml>.

Career and Technical Student Organization (CTSO)

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Accommodations

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Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Photography Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8201300
CIP Number	0650060503
Grade Level	9-12
Program Length	7 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	SkillsUSA
SOC Codes (all applicable)	27-4021 – Photographers 27-4032 – Film and Video editors
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for careers in the photography industry.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, communication skills, leadership skills, human relations and employability skills, safe and efficient work practices, and the use of digital cameras techniques, commercial and industrial applications with emphasis on composition and color dynamics, printing, workflow, software and use, care, and maintenance of photographic equipment.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of seven (7) courses.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8201310	Digital Photography 1	PHOTOG @7 7G	1 credit	27-4021	2	CT
8201320	Digital Photography 2		1 credit	27-4021	2	CT
8201330	Digital Photography 3		1 credit	27-4021	2	CT
8201340	Digital Photography 4		1 credit	27-4032	2	CT
8201350	Digital Photography 5		1 credit	27-4032	2	CT
8201360	Digital Photography 6		1 credit	27-4021	2	CT
8201370	Digital Photography 7		1 credit	27-4021	2	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

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2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

Digital Photography 1

- 01.0 Discuss the history of photography.
- 02.0 Evaluate the production process.
- 03.0 Understand intellectual property rights, copyright laws and plagiarism as each applies to creative assets.
- 04.0 Operate parts of a camera system.
- 05.0 Demonstrate proper use of camera and support equipment.
- 06.0 Take basic photographs.
- 07.0 Use photographic workflow applications.

Digital Photography 2

- 08.0 Develop a production plan.
- 09.0 Demonstrate knowledge of art/creative direction.
- 10.0 Demonstrate proficiency in computer skills.

Digital Photography 3

- 11.0 Use photo editing software.
- 12.0 Use photographic lights.
- 13.0 Use photography sets, backgrounds and stages.
- 14.0 Process and print photographs.

Digital Photography 4

- 15.0 Demonstrate knowledge of photo/video journalism.
- 16.0 Demonstrate knowledge of video production with Interchangeable Lens Cameras (ILC).

Digital Photography 5

- 17.0 Demonstrate knowledge of video software.
- 18.0 Practice the business of commercial digital photography.

Digital Photography 6

- 19.0 Operate various format cameras.
- 20.0 Demonstrate knowledge of advanced software retouching.

Digital Photography 7

- 21.0 Develop a professional portfolio of work.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Photography 1
Course Number: 8201310
Course Credit: 1

Course Description:

This course provides competencies in photographic history, the production process, intellectual property rights, camera systems, support equipment, basic photography and workflow applications.

CTE Standards and Benchmarks

01.0 Discuss the history of photography. The student will be able to:

01.01 Discuss photography as an invention.

01.02 Describe early uses of photography.

01.03 Describe the mechanics of early photographic systems.

01.04 Discuss the concept of photography as art.

01.05 Show the concept of the “decisive moment.”

01.06 Identify aesthetic differences between genres of photography (e.g., pictorial, straight, and photojournalism).

01.07 Demonstrate knowledge of the use and role of Digital Photography in the present.

02.0 Evaluate the production process. The student will be able to:

02.01 Identify the job titles associated with digital photography.

02.02 Identify various tools and equipment used in digital photography.

02.03 Use speed and efficiency concepts (workflow).

02.04 Identify the different types of photographic media and the relation to occupations in the field of Photography (e.g., photojournalism, fine art, event, headshots, family portrait, fashion, sports, magazine, publications, and product).

02.05 Identify the need for industry networking and forming relationships with professionals in the field.

02.06 Use basic communication concepts (e.g., verbal, memos, and paperwork and purchase orders).

CTE Standards and Benchmarks	
02.07	Identify the stages of production.
02.08	Analyze photographic terms and jargon.
02.09	Prepare, organize, and create presentations for clients (e.g., contact sheets and design layouts).
03.0	Understand intellectual property rights, copyright laws and plagiarism as each applies to creative assets. The student will be able to:
03.01	Examine the limits and expectations of copyright protection.
03.02	Analyze the various types of shared work in dealing with all forms of intellectual property, online as well as physical.
03.03	Describe the transfer and licensing of creative work.
03.04	Articulate the use of “exclusive rights” to intellectual creations.
03.05	Demonstrate the use of metadata for embedding authorship within a photo.
04.0	Operate parts of a camera system. The student will be able to:
04.01	Identify basic camera parts (e.g., lens, battery, flash, shutter and display).
04.02	Remove and attach standard lenses.
04.03	Charge and connect batteries.
04.04	Identify, insert and format recording media.
04.05	Use basic camera functions (e.g., menu settings and application of settings).
04.06	Set image format and size.
04.07	Use camera auto, program, scene and manual modes.
04.08	Use camera viewfinder and LCD displays for image review.
04.09	Use basic lens controls (auto, manual focus and zoom).
04.10	Use image International Standards Organization (ISO) and metering functions.
04.11	Set proper white balance.
04.12	Use shutter and aperture priority modes.

CTE Standards and Benchmarks	
04.13	Set proper f-stop and shutter speeds.
04.14	Use camera drive modes such as delayed, multiple and remote.
04.15	Operate a camera mounted flash and use fill and red-eye reduction.
05.0	Demonstrate proper use of camera and support equipment. The student will be able to:
05.01	Perform basic handholds of camera in portrait and landscape.
05.02	Identify basic components of a tripod (head, sticks and spreader) and set up a tripod with a camera attached.
05.03	Setup and level tripod for use in portrait and landscape.
05.04	Attach camera to support equipment.
05.05	Identify auxiliary support devices.
06.0	Take basic photographs. The student will be able to:
06.01	Apply camera care and maintenance principles.
06.02	Define the subject of a photograph.
06.03	Identify available light sources.
06.04	Demonstrate understanding of photo composition (e.g., rule of thirds, leading lines).
06.05	Select an appropriate lens for subject (wide, tight, macro).
06.06	Use available light to take still life, portrait, and action photographs.
06.07	Create a series (picture study) of photographs around a defined subject.
07.0	Use photographic workflow applications. The student will be able to:
07.01	Establish system requirements for workflow application software.
07.02	Install and configure workflow application software.
07.03	Identify parts of the software interface (menus and palettes).
07.04	Import photographs from various media sources.

CTE Standards and Benchmarks

07.05 Define and create keyword tags for imported images.

07.06 Organize, rate, label and rename image collections.

07.07 Create and modify image metadata.

07.08 Perform image post-processing various editing software (e.g., crop, image selection, and image adjustments).

07.09 Export final images for clients.

07.10 Create and upload photos to online portfolio, online art sharing sites, and social media.

07.11 Utilize both menus and tools within the software interface.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Photography 2
Course Number: 8201320
Course Credit: 1

Course Description:

This course covers competencies in developing a production plan, creative direction and computer skills.

CTE Standards and Benchmarks	
08.0	Develop a production plan. The student will be able to:
08.01	Identify contract scope and work requirements when working with a client.
08.02	Identify client needs.
08.03	Determine distribution requirements and client deliverables.
08.04	Identify the stages of production.
08.05	Create basic communication concepts verbally and online.
08.06	Develop a production schedule.
08.07	Define roles and coordinate needed production crew.
08.08	Evaluate the scope and use of model releases.
08.09	Evaluate the scope and use of property releases.
08.10	Evaluate the scope and use of liability releases.
08.11	Identify need and use for production insurance.
08.12	Determine and secure equipment as required per project.
09.0	Demonstrate knowledge of art/creative direction. The student will be able to:
09.01	Develop overall aesthetic of a photograph based on client's needs, art direction, or brand purpose.

CTE Standards and Benchmarks

09.02	Demonstrate the ability to create moods with design elements for the images.
09.03	Describe the importance of art direction as it pertains to the message to be conveyed for the images (e.g., composite images and photography).
09.04	Identify the use of color in art direction.
09.05	Understand the various roles in a large production.
09.06	Use industry standards to execute assigned tasks in a professional manner.
10.0	Demonstrate proficiency in computer skills. The student will be able to:
10.01	Understand how computers function as it pertains to necessary components and software for photography.
10.02	Understand computer performance requirements for image making software.
10.03	Perform computer and software upgrades.
10.04	Understand the importance of storing and backing up data and photos.
10.05	Identify basic troubleshooting and software issues that can occur on jobs/sites.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Photography 3
Course Number: 8201330
Course Credit: 1

Course Description:

This course covers competencies in photo editing software, photographic lights, sets and photo processing.

CTE Standards and Benchmarks

11.0 Use photo editing software. The student will be able to:

11.01 Demonstrate understanding of file formats and storage options.

11.02 Compare and contrast available photographic editing software.

11.03 Identify parts of the software interface (menus and palettes).

11.04 Use each of the basic tool sets.

11.05 Import, open files, and save, and export images.

11.06 Develop a file backup plan.

11.07 Demonstrate understanding of layers and channels.

11.08 Demonstrate understanding of filters, effects and plug-ins.

11.09 Demonstrate understanding of value and efficiency of file presets.

11.10 Select portions of an image for manipulation using selection tools.

11.11 Edit image size using edit/transform tools and cropping tools.

11.12 Modify and color-correct images using a combination of the following: hue/saturation, vibrance, levels, curves, and brightness/contrast.

11.13 Use and append brushes for image creation and adjustments.

11.14 Identify non-destructive and destructive operations.

CTE Standards and Benchmarks

11.15	Import edit and export raw files.
11.16	Demonstrate the basic uses of video.
11.17	Demonstrate knowledge of use for the undo/redo, history, and cache system.
11.18	Use keyboard shortcuts to improve efficiency.
11.19	Locate and effectively use the help menu system.
11.20	Use editing software for image altering and designing basic typography and/or text-specific art/images.
12.0	Use photographic lights. The student will be able to:
12.01	Demonstrate understanding of light (direction, intensity, color, contrast, hardness).
12.02	Demonstrate understanding of natural, artificial, available and ambient light sources.
12.03	Demonstrate understanding and use of sunlight (time of day, color temperature, color correcting, blocking and shade).
12.04	Use continuous lighting setups and equipment.
12.05	Use flash and strobe light setups and systems.
12.06	Use on camera and integrated camera flash systems.
12.07	Demonstrate understanding of three-point lighting.
12.08	Use a light meter.
12.09	Use light modifiers such as scrim, reflectors and flags.
12.10	Use lights on location.
13.0	Use photography sets, backgrounds and stages. The student will be able to:
13.01	Set up backgrounds, sets, or set plans under direction or independently after dialogue with the set/creative director.
13.02	Define the intended look and materials to be used.
13.03	Erect background stands and hang background material.
13.04	Adjust available seating for studio portraits.

CTE Standards and Benchmarks

13.05	Safely secure all grip equipment including reflector stands, c-stand, light stands and sand bags.
14.0	Process and print photographs. The student will be able to:
14.01	Prepare photos, both color and black and white images, for printing using photo editing software.
14.02	Adjust the crop, bleed, and trim of a photograph.
14.03	Adjust the color mode and resolution of a photograph.
14.04	Calibrate computer monitor and software for printing system.
14.05	Compare and contrast available papers, printers and inks.
14.06	Compare and contrast available printing services based on quality, speed, price, reliability, location.
14.07	Describe International Color Consortium (ICC) profiles purpose and use.
14.08	Describe the value of archival inks and papers.
14.09	Analyze color prints for color correction and tonality.
14.10	Describe methods of mounting, matting and framing photographs.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Photography 4
Course Number: 8201340
Course Credit: 1

Course Description:

This course covers competencies in photo/video journalism and digital single-lens reflex (DSLR) video production.

CTE Standards and Benchmarks

15.0 Demonstrate knowledge of photo/video journalism. The student will be able to:

15.01 Describe the history of photo/video journalism.

15.02 Identify the jobs and roles related to photo/video journalism.

15.03 Analyze the legal and ethical issues related to photo/video journalism.

15.04 Describe the elements that make up a photo story.

15.05 Create a story board sequence of a photo story and write captions.

15.06 Imbed metadata as needed.

15.07 Shoot correct length of video to tell story and provide coverage.

15.08 Prepare media for and identify distribution sources.

16.0 Demonstrate knowledge of video production with Interchangeable Lens Cameras (ILC). The student will be able to:

16.01 Compare still and video modes on camera.

16.02 Compose video shots to demonstrate movement.

16.03 Choose the appropriate video format (standard/codec and frame rate).

16.04 Compare and contrast ILC video with traditional video cameras

16.05 Choose appropriate recording media based on card speed and size.

CTE Standards and Benchmarks

16.06	Select appropriate focusing aids and methods.
16.07	Analyze production requirements to determine lighting equipment needs.
16.08	Set appropriate exposure, white balance and shutter speed.
16.09	Use external audio capture device.
16.10	Identify video compression picture quality loss.
16.11	Demonstrate the use of full and cropped sensors (e.g., rolling shutter).
16.12	Establish the use of action-safe and title-safe areas.
16.13	Set appropriate focus.
16.14	Analyze differences with various microphones (e.g., condenser, lavalier, dynamic) to capture audio for video.
16.15	Understand the use of matte boxes.
16.16	Demonstrate use of stabilization rigs.
16.17	Transfer footage to content management software.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Photography 5
Course Number: 8201350
Course Credit: 1

Course Description:

This course covers competencies in video software and commercial digital photography business.

CTE Standards and Benchmarks	
17.0	Demonstrate knowledge of video software. The student will be able to:
17.01	Demonstrate the aspects of video editing used in production of video and audio clips, movies, etc.
17.02	Identify panel layout and aspects of each in video editing software.
17.03	Use tools, effects, and filter features in video editing software.
17.04	Understand the importance of asset management when importing and organizing.
17.05	Sync external audio with corresponding video clip.
17.06	Use motion paths, rendering functions, and lighting effects in video editing software for specific/separate functionality within a work of art.
17.07	Apply layer mask to video.
17.08	Color-correct video using brightness, hue and contrast adjustments.
17.09	Use vector, text, and color keying tools.
17.10	Export and render video to appropriate format.
18.0	Practice the business of commercial digital photography. The student will be able to:
18.01	Identify business aspects of commercial digital photography.
18.02	Apply appropriate communication and human relations skills.
18.03	Analyze the photography industry's various market sectors (events, family portrait, public relations, product/studio, fashion, catalog, magazine and food).

CTE Standards and Benchmarks

18.04 Develop a business plan for a commercial photography business.

18.05 Identify and understand the importance of industry associations related to commercial photography.

18.06 Research market rates for photographic work.

18.07 Compare and contrast available stock photography sites.

18.08 Research online portfolio sites.

18.09 Develop effective advertising.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Photography 6
Course Number: 8201360
Course Credit: 1

Course Description:

This course covers competencies in format cameras and High Dynamic Range (HDR) photography.

CTE Standards and Benchmarks

19.0 Operate various format cameras. The student will be able to:

19.01 Use various format cameras (e.g., DSLR, mirrorless, hybrid, and medium format).

19.02 Understand the unique attributes of mobile phone cameras.

19.03 Understand processing images with tether capture within software.

20.0 Demonstrate knowledge of advanced software retouching. The student will be able to:

20.01 Process and create HDR images in camera and with photo editing software.

20.02 Demonstrate alternate software workflows.

20.03 Process and create panoramic images in camera and with photo editing software.

20.04 Create software presets.

20.05 Process and create black and white images in camera and with photo editing software.

20.06 Utilize digital stitching and composite images into single frame images.

20.07 Restore damaged photos.

20.08 Reduce ghosting effect using photo editing software.

20.09 Reduce noise and correct chromatic aberrations.

20.10 Export finished image as flat image or HDR format image.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Photography 7
Course Number: 8201370
Course Credit: 1

Course Description:

This course consists of developing a professional photography portfolio.

CTE Standards and Benchmarks

21.0	Develop a professional portfolio of work. The student will be able to:
21.01	Identify elements of a professional portfolio and résumé.
21.02	Examine and select student work to include in a portfolio and résumé.
21.03	Select cohesive photographs and information to include in a portfolio and résumé.
21.04	Explore and/or utilize websites and digital portfolio creation, distribution and viewing.
21.05	Determine the format for portfolio and résumé.
21.06	Research local galleries for portfolio exhibition.
21.07	Produce résumé for final review.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

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Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Video Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8201400
CIP Number	0610010523
Grade Level	9-12
Program Length	6 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	SkillsUSA
SOC Codes (all applicable)	27-4011 – Audio and Video Equipment Technicians 27-4031 – Camera Operators, Television, Video and Motion Picture 27-4032 – Film and Video Editors
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as production assistants, audio/video equipment technician, video/TV camera operators, video editors, multimedia artists/animators and broadcast technicians.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not be limited to, communication skills, leadership skills, human relations and employability skills, safe and efficient work practices, and preparation to assume responsibility for the overall production of digital video activities (e.g., scripts, lighting, camera operation, electronic news gathering, field/studio production, video editing).

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of six (6) credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8201410	Digital Video Technology 1	TEC ED 1 @ 2 ENG&TEC ED1@2 TV PRO TEC @7 7G	1 credit	27-4011	3	CT
8201420	Digital Video Technology 2		1 credit	27-4011	3	CT
8201430	Digital Video Technology 3		1 credit	27-4011	3	CT
8201440	Digital Video Technology 4		1 credit	27-4031	3	CT
8201450	Digital Video Technology 5		1 credit	27-4031	3	CT
8201460	Digital Video Technology 6		1 credit	27-4032	3	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

Digital Video Technology 1

- 01.0 Apply knowledge of the digital video technology program procedures.
- 02.0 Demonstrate an understanding of basic industry terminology and acronyms.
- 03.0 Collaborate with others as an effective member of a digital video team.
- 04.0 Demonstrate professionalism and personal responsibility.
- 05.0 Understand and demonstrate the steps in the digital video pre-production process.
- 06.0 Interpret scripts for digital video technology.
- 07.0 Understand and demonstrate the digital video production process.
- 08.0 Use basic camera equipment.
- 09.0 Identify lighting needs for a planned production.
- 10.0 Understand basic audio operations.
- 11.0 Demonstrate the ability to perform on camera.
- 12.0 Demonstrate understanding of the digital video post-production process.
- 13.0 Operate an editing system.
- 14.0 Understand the value of graphics in a production.

Digital Video Technology 2

- 15.0 Demonstrate awareness of industry-related ethics and laws.
- 16.0 Demonstrate the ability to complete the pre-production process for a video production project.
- 17.0 Demonstrate the ability to complete the production process for a video production project.
- 18.0 Use television production equipment for a digital video production.
- 19.0 Perform lighting activities for a digital video production.
- 20.0 Develop interviewing skills.
- 21.0 Demonstrate the ability to complete the post-production process for a video production project.

Digital Video Technology 3

- 22.0 Demonstrate industry accepted skills for remote productions.
- 23.0 Demonstrate the ability to complete the pre-production process for an advanced video production project.
- 24.0 Demonstrate the ability to complete the production process for an advanced video production project.
- 25.0 Demonstrate the ability to complete the post-production process for an advanced video production project.

Digital Video Technology 4

- 26.0 Plan, coordinate, and manage a video or webcast production.
- 27.0 Demonstrate an understanding of employability in the digital video production industry.

Digital Video Technology 5

28.0 Create and produce a digital video production.

29.0 Demonstrate an independent level of proficiency in a selected area of specialization.

Digital Video Technology 6

30.0 Demonstrate advanced script writing techniques.

31.0 Apply skills by producing a program.

32.0 Perform advanced digital audio and video recording and editing operations.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Video Technology 1
Course Number: 8201410
Course Credit: 1

Course Description:

This course provides students with an introduction to the digital video production process; content includes safe work practices, planning a production set, designing lighting plans, camera operation, and audio/ video recording, mixing, and editing.

CTE Standards and Benchmarks	
01.0	Apply knowledge of the digital video technology program procedure. The students will be able to:
01.01	Follow classroom procedures.
01.02	Follow industry safety rules, regulations and policies.
01.03	Demonstrate proper use and care of equipment.
02.0	Demonstrate an understanding of basic industry terminology and acronyms. The student will be able to:
02.01	Define trade terminology, including the four steps of the production process.
02.02	Define trade abbreviations and acronyms when appropriate.
03.0	Collaborate with others as an effective member of a digital video team. The student will be able to:
03.01	Understand the job functions of a digital video team.
03.02	Give and follow directions.
03.03	Function as a member of a team.
03.04	Set and adhere to production deadlines established by others.
03.05	Critique and analyze a production.
04.0	Demonstrate professionalism and personal responsibility. The student will be able to:

CTE Standards and Benchmarks

04.01	Discuss how to legally obtain and use source materials.
04.02	Explain basic copyright laws and issues related to digital video production.
04.03	Discuss appropriate responses to feedback.
05.0	Understand and demonstrate the steps in the digital video pre-production process. The student will be able to:
05.01	Identify and perform the components of the pre-production phase (e.g., purpose, script writing, target audience, schedule, and distribution method).
05.02	Identify the format/segment type, audience, and genre.
05.03	Explain the components of a pitch, storyboard, and script.
05.04	Select the appropriate location(s) for the specified program type.
05.05	Establish feasible production deadlines.
06.0	Interpret scripts for digital video technology. The student will be able to:
06.01	Define the terminology used in script writing.
06.02	Identify a script by format, function, and utilization.
06.03	Specify the steps that lead to a complete script.
06.04	Write a script in an appropriate format.
07.0	Understand and demonstrate the digital video production process. The student will be able to:
07.01	Identify and perform the components of the production phase (e.g., selecting equipment, operating equipment, interviewing, directing, lighting, and audio).
07.02	Summarize the roles of the various personnel for video production projects (e.g., producer, director, editor, camera operator).
07.03	Identify and perform commonly used camera shots, angles, and movements.
07.04	Plan and execute shot to obtain the required action/footage in studio and/or field production environments.
07.05	Perform basic field production tasks that include camera, lighting, and sound responsibilities.

CTE Standards and Benchmarks

08.0 Use basic camera equipment. The student will be able to:

08.01 Set up, turn on, and operate a video camera.

08.02 Identify and demonstrate basic video composition principles (e.g., rule of thirds, leading lines, rule of 180)

08.03 Identify elements that make a quality video image, both in its composition and technical nature.

08.04 Identify and select appropriate equipment for a specific production.

08.05 Record, transfer, store, and play assets from various media.

09.0 Identify lighting needs for a planned production. The student will be able to:

09.01 Explain the use of basic lighting equipment.

09.02 Define light quality in terms of intensity, color, direction, and characteristics.

09.03 Analyze lighting needs for a production.

09.04 Set up appropriate lighting for a production (one-, two-, three- point lighting, etc.).

10.0 Understand basic audio operations. The student will be able to:

10.01 Compare and contrast various microphone types.

10.02 Determine optimal microphone placement.

10.03 Establish appropriate recording conditions.

10.04 Identify, select, and demonstrate the use of appropriate microphones for a production (pick-up pattern, directionality, etc.).

10.05 Identify the elements of a quality audio track.

10.06 Set up audio recording equipment.

10.07 Perform pre-production sound checks.

10.08 Record production sound.

11.0 Demonstrate the ability to perform on camera. The student will be able to:

CTE Standards and Benchmarks

11.01	Practice appropriate on-camera performance skills (e.g., appearance, gestures, and posture).
11.02	Demonstrate appropriate speaking skills for an on-camera performance (e.g., pitch, tone, emphasis, inflection, enunciation, and timing).
11.03	Perform as talent in a production.
12.0	Demonstrate understanding of the digital video post-production process. The student will be able to:
12.01	List the components of the post-production phase (e.g., video and audio editing, graphics, and distribution method).
12.02	Understand production values (e.g., continuity).
12.03	Define appropriate audio and video digital compression and signal types.
12.04	Explain the need for data management.
12.05	Organize and evaluate materials for editing.
12.06	Perform basic editing functions (cuts, transitions, etc.).
12.07	Mix audio and video resources in appropriate sequence for the final cut.
13.0	Operate an editing system. The student will be able to:
13.01	Select the best source material such as voiceover (VO), sound on tape (SOT) and b-roll to achieve program goals.
13.02	Combine elements into a program.
13.03	Control video clips and effects.
13.04	Control audio mix and effects.
13.05	Prepare basic graphics for a production.
14.0	Understand the value of graphics in a production. The student will be able to:
14.01	Demonstrate an understanding of graphic image types, file formats, and technical requirements for a production.
14.02	Understand text, font, colors, title safe area, lower thirds, and placement.

CTE Standards and Benchmarks

14.03 Determine the graphic requirements for a production.

14.04 Edit basic graphics into a program or segment using editing software.

14.05 Demonstrate the ability to use type, color, composition, and graphic elements.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Video Technology 2
Course Number: 8201420
Course Credit: 1

Course Description:

This course provides students with intermediate level instruction in the digital video production process.

CTE Standards and Benchmarks

15.0	Demonstrate awareness of industry-related ethics and laws. The student will be able to:
15.01	Define terminology related to ethics and laws (e.g., plagiarism, copyright law, libel, slander, and right to privacy).
15.02	Summarize and explain the legal and ethical acquisition and use of digital materials; appropriately cite sources.
15.03	Research and understand the Fair Use Act of 2007.
16.0	Demonstrate the ability to complete the pre-production process for a video production project. The student will be able to:
16.01	Define the objective and intended audience for a video production project (e.g., public service announcement).
16.02	Prepare a detailed pitch, storyboard, and script for a video production project (e.g., public service announcement).
16.03	Create a schedule for the production project
16.04	Contact potential subjects and schedule an interview.
16.05	Conduct an interview using coherent and concise language and correct grammar.
16.06	Demonstrate effective listening skills.
17.0	Demonstrate the ability to complete the production process for a video production project. The student will be able to:
17.01	Demonstrate knowledge of camera equipment and functions.
17.02	Plan, execute, and record a video shoot to obtain the required action/footage and effects.

CTE Standards and Benchmarks

17.03	Perform production tasks that include intermediate camera, lighting, and sound techniques.
18.0	Use digital video equipment for a production. The student will be able to:
18.01	Execute quality videography principles while filming for a production.
18.02	Use appropriate equipment for a production.
18.03	Perform basic maintenance and troubleshooting on equipment.
18.04	Understand how the lens, focal length, aperture, and exposure work to create desired effects.
19.0	Perform lighting activities for a digital video production. The student will be able to:
19.01	Create and label a diagram for a lighting plan.
19.02	Assemble appropriate lighting using lighting modifiers (e.g., reflectors, flags, artificial lighting, and diffusers).
19.03	Create depth and dimension using appropriate light modifiers.
20.0	Develop interviewing skills. The student will be able to:
20.01	Develop open-ended questions to elicit detailed responses.
20.02	Select appropriate subjects to interview based on a specific topic.
20.03	Select an effective location that complements the interview.
20.04	Contact potential subjects and schedule an interview.
20.05	Conduct an interview using coherent and concise language and correct grammar.
20.06	Demonstrate effective listening skills.
21.0	Demonstrate the ability to complete the post-production process for a video production project. The student will be able to:
21.01	Demonstrate the ability to edit video and audio sources.
21.02	Demonstrate appropriate use of graphics in a production (e.g., lower thirds and full screen graphics).
21.03	Identify and export video for an appropriate distribution method for a project.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Video Technology 3
Course Number: 8201430
Course Credit: 1

Course Description:

Students will participate in the digital video pre-production, production, and post-production processes.

CTE Standards and Benchmarks	
22.0	Demonstrate industry accepted skills for remote productions. The students will be able to:
22.01	Demonstrate skills in selecting production topics.
22.02	Determine quality of production topics.
22.03	Operate digital video production equipment.
22.04	Adhere to production deadlines.
22.05	Troubleshoot and maintain production equipment.
23.0	Demonstrate the ability to complete the pre-production process for an advanced video production project. The student will be able to:
23.01	Define the objective and intended audience for an advanced video production project (e.g., music video and documentary).
23.02	Understand the role of a specified distribution method planned distribution in the video production process.
23.03	Prepare a detailed pitch, storyboard, and script for an advanced video production project (e.g., music video and documentary).
23.04	Select cast and crew members for the production.
23.05	Plan and hold a pre-production meeting.
23.06	Create a schedule for the production project.
23.07	Scout locations and plan for any contingencies.

CTE Standards and Benchmarks

23.08	Select clothing, makeup, and accessories for use on camera in a specified production.
23.09	Determine the props, costumes, and other resources required for a production.
24.0	Demonstrate the ability to complete the production process for an advanced video production project. The student will be able to:
24.01	Operate video production equipment in studio and location (field) production environments.
24.02	Plan, execute, and record a video shoot to obtain the required action/footage and effects.
24.03	Perform production tasks that include advanced camera, lighting, and sound techniques.
25.0	Demonstrate the ability to complete the post-production process for an advanced video production project. The student will be able to:
25.01	Demonstrate the ability to mix multiple sources in a post-production setting.
25.02	Perform advanced sound edits and enhancements.
25.03	Perform advanced video edits and enhancements.
25.04	Enhance a digital video project by using multiple appropriate graphics and visual effects.
25.05	Determine special effects needed for a production.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Video Technology 4
Course Number: 8201440
Course Credit: 1

Course Description:

Students will demonstrate proficiency in all phases of the digital video production process (pre-production, production, post-production).

CTE Standards and Benchmarks

26.0 Plan, coordinate, and manage a video or webcast production – the student will be able to:

26.01 Produce and direct high-quality digital video production projects.

26.02 Utilize the equipment and technology appropriate for pre-production, production, and post-production of a digital video project.

26.03 Demonstrate knowledge of graphic image types, file formats, and the technical requirements for a production.

26.04 Demonstrate the ability to use manipulate lighting, audio, video, and graphics for intended effects.

27.0 Demonstrate an understanding of employability in the digital video production industry. The student will be able to:

27.01 Create a résumé, a list of references, and a letter of interest.

27.02 Identify common industry-related interview questions.

27.03 Conduct a job search.

27.04 Create a demo reel to showcase work samples to potential customers/clients.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Video Technology 5
Course Number: 8201450
Course Credit: 1

Course Description:

Students will demonstrate professionalism, develop interviewing skills, perform on camera in video productions, and complete all phases in the digital video production process.

CTE Standards and Benchmarks	
28.0	Create and produce a digital video production. The student will be able to:
28.01	Plan a production.
28.02	Write a production.
28.03	Direct a production.
28.04	Record and edit a production.
28.05	Manage and oversee a team of peers to create a production.
29.0	Demonstrate an independent level of proficiency in a selected area of specialization. The student will be able to:
29.01	Survey area(s) for specialization.
29.02	Select an area(s) for specialization.
29.03	Execute all roles in selected specialization(s) independently.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Video Technology 6
Course Number: 8201460
Course Credit: 1

Course Description:

This course requires the student to plan, coordinate, and manage all aspects of a video or webcast production.

CTE Standards and Benchmarks

30.0 Demonstrate advanced script writing techniques. The student will be able to:

30.01 Write a script for a program with minimum 10 minute program length.

30.02 Use the correct script format for the program selected (e.g., documentary and short film).

31.0 Apply skills by producing a program. The student will be able to:

31.01 Plan a digital video program with a minimum 10 minute program length.

31.02 Write a digital video program with a minimum 10 minute program length.

31.03 Direct a digital video program with a minimum 10 minute program length.

31.04 Record a digital video program with a minimum 10 minute program length.

31.05 Edit a digital video program with a minimum 10 minute program length.

31.06 Distribute a digital video program on an appropriate platform.

32.0 Perform advanced digital audio and video recording and editing operations. The student will be able to:

32.01 Utilize the internet to search and learn current industry editing and videography trends.

32.02 Demonstrate videography and editing proficiency through advanced techniques.

Additional Information

Laboratory Activities

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Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Program Title: Television Production Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8201500
CIP Number	0610020217
Grade Level	9-12
Program Length	8 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	SkillsUSA
SOC Codes (all applicable)	27-4032 – Film and Video Editors 27-4031 – Camera Operators, Television, Video, and Motion Picture
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as television production operators, television broadcast technicians, camera operators, other professional/para-professional technicians, video recording engineers, and audio recording engineers.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, communication skills, leadership skills, human relations and employability skills, safe and efficient work practices, and preparation to assume responsibility for the television production studio activities (e.g., scriptwriting, lighting, shooting and directing, electronic news gathering, and field production).

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of eight (8) credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8201510	Television Production Technology 1	BUS ED 1 @2 @4 TEC ED 1 @ 2 ENG&TEC ED1@2 TV PRO TEC @ 7 7G	1 credit	27-4031	2	CT
8201520	Television Production Technology 2		1 credit	27-4031	2	CT
8201530	Television Production Technology 3		1 credit	27-4031	3	CT
8201540	Television Production Technology 4		1 credit	27-4031	3	CT
8201550	Television Production Technology 5		1 credit	27-4031	3	CT
8201560	Television Production Technology 6		1 credit	27-4031	3	CT
8201570	Television Production Technology 7		1 credit	27-4032	3	CT
8201580	Television Production Technology 8		1 credit	27-4032	3	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

Television Production Technology 1

- 01.0 Conduct online research for television production.
- 02.0 Interpret scripts for television production.
- 03.0 Demonstrate understanding of basic industry terminology and acronyms.
- 04.0 Apply knowledge of the television production technology program procedures.
- 05.0 Collaborate with others as an effective member of a television production team.
- 06.0 Use basic television production equipment.
- 07.0 Identify lighting needs for a planned production.
- 08.0 Perform basic audio and video recording operations.
- 09.0 Operate an editing system.

Television Production Technology 2

- 10.0 Write a broadcast style script.
- 11.0 Stage a set as directed for television production.
- 12.0 Perform lighting activities for a planned production.
- 13.0 Use basic equipment in a television production studio.
- 14.0 Operate television studio audio control systems.
- 15.0 Perform character generation (CG).
- 16.0 Operate editing software.

Television Production Technology 3

- 17.0 Utilize the Internet to gather data for a planned production.
- 18.0 Demonstrate industry accepted skills for studio production.
- 19.0 Assemble a lighting set up using modifiers (e.g., flags, reflectors, diffusers or artificial lights).
- 20.0 Demonstrate correct use of equipment used in television production.
- 21.0 Perform intermediate digital audio and video recording and editing operations.

Television Production Technology 4

- 22.0 Function as a member of a production team.
- 23.0 Select special effects lighting for a planned production.
- 24.0 Create a variety of television programming.

Television Production Technology 5

- 25.0 Research and select one or more areas of television production for specialization.
- 26.0 Perform advanced audio and video recording and editing operations in a studio situation.

- 27.0 Create a television program.
- 28.0 Demonstrate an independent level of proficiency in the selected area of specialization.

Television Production Technology 6

- 29.0 Demonstrate advanced scriptwriting techniques.
- 30.0 Apply production skills by producing a program.
- 31.0 Perform advanced digital audio and video recording and editing operations.

Television Production Technology 7

- 32.0 Perform basic maintenance for lighting instruments.
- 33.0 Perform Electronic News Gathering (ENG) and Electronic Field Production (EFP) equipment functions.

Television Production Technology 8

- 34.0 Translate written script into a full television production.
- 35.0 Create and maintain a portfolio with embedded production media.
- 36.0 Function at an independent level with proficiency in one area of television production.
- 37.0 Research a specific career in television.

**Florida Department of Education
Student Performance Standards**

Course Title: **Television Production Technology 1**
Course Number: **8201510**
Course Credit: **1**

Course Description:

This course covers competencies in safety, lighting tasks, the use of basic television production equipment, scriptwriting, collaboration, research, and audio and video recording and editing.

CTE Standards and Benchmarks	
01.0	Conduct online research for television production. The student will be able to:
01.01	Complete an Internet search for viable information used in scripting a project.
01.02	Identify valid websites for information retrieval.
02.0	Interpret scripts for television production. The student will be able to:
02.01	Identify a script by format, function and utilization.
02.02	Define the terminology used in script writing.
02.03	Specify the steps leading to a script.
02.04	Write a script in an appropriate format.
03.0	Demonstrate understanding of basic industry terminology and acronyms. The student will be able to:
03.01	Define trade terminology, including the four steps of the production process.
03.02	Define trade abbreviations and acronyms as appropriate.
04.0	Apply knowledge of the television production technology program procedures. The student will be able to:
04.01	Follow classroom procedures.
04.02	State and apply general safety rules for operation of equipment.

CTE Standards and Benchmarks

04.03 Transport equipment safely and securely.

04.04 Store equipment in appropriate locations.

05.0 Collaborate with others as an effective member of a television production team. The student will be able to:

05.01 Understand the job functions of a television production team.

05.02 Give and follow directions.

05.03 Function as a member of a production team.

05.04 Set and adhere to production deadlines established by others.

05.05 Critique and analyze a production.

05.06 Analyze lighting needs for a production.

05.07 Set-up appropriate lighting for a production.

06.0 Use basic television production equipment. The student will be able to:

06.01 Load, cue, transfer, record and play assets from various media.

06.02 Set up, turn on and operate a video camera.

06.03 Set up, turn on, and operate audio production equipment.

06.04 Identify and demonstrate picture composition principles (e.g., rule of thirds, leading lines, etc.).

06.05 Identify types of video and audio connectors.

06.06 Identify, select and demonstrate use of a microphone for situation (pick-up pattern, directionality, etc.).

06.07 Identify the qualities of a good audio track.

06.08 Identify and select appropriate equipment for a specific production.

06.09 Select and place microphones for maximum effect.

06.10 Describe set up and operate video and audio input and output devices.

CTE Standards and Benchmarks

06.11	Describe function of video and audio monitors.
07.0	Identify lighting needs for a planned production. The student will be able to:
07.01	Describe types of lighting fixtures.
07.02	Identify parts of lighting fixtures and accessories.
07.03	Analyze lighting needs for a production.
07.04	Set-up appropriate lighting for a production.
08.0	Perform basic audio and video recording operations. The student will be able to:
08.01	Describe operational parts of a video recording device.
08.02	Operate video recording devices to record and playback.
08.03	Perform studio editing procedures for both audio and video production needs (e.g., switcher, mixer, etc.).
08.04	Transfer and log video.
09.0	Operate an editing system. The student will be able to:
09.01	Prepare graphics for production.
09.02	Combine elements into a program.
09.03	Select the best source material, such as voiceover (VO), sound on tape (SOT), and B-roll, to achieve program goals.
09.04	Control audio mix and effects.
09.05	Edit a shot sequence or story for continuity.

**Florida Department of Education
Student Performance Standards**

Course Title: **Television Production Technology 2**
Course Number: **8201520**
Course Credit: **1**

Course Description:

Students explore script writing, audio and video recording and editing, set staging, and character generation.

CTE Standards and Benchmarks	
10.0	Write a broadcast style script. The student will be able to:
10.01	Plan and produce a storyboard.
10.02	Specify steps leading to broadcast scripts.
10.03	Write a broadcast script including location information, camera moves and dialogue.
11.0	Stage a set as directed for television production. The student will be able to:
11.01	Dress a set for a television production.
11.02	Inspect for and correct safety concerns.
11.03	Sketch a set plan.
12.0	Perform lighting activities for a planned production. The student will be able to:
12.01	Describe functions of the master lighting panel and dimmer board.
12.02	Draw and label a diagram for a lighting plot.
12.03	Assemble appropriate lighting using light modifiers (e.g., reflectors, flags, or artificial lighting).
13.0	Use basic equipment in a television production studio. The student will be able to:
13.01	Determine appropriate audio and video cables for use.

CTE Standards and Benchmarks

13.02	Troubleshoot a bad cable connection.
13.03	Set up video and audio monitors for production.
13.04	Describe function of a Camera Control Unit (CCU).
13.05	Describe parts of an audio mixing console.
13.06	Operate a teleprompter.
13.07	Operate an audio mixing console.
13.08	Operate video switcher.
13.09	Direct participants in production of a program.
13.10	Perform on-camera.
14.0	Operate television studio audio control systems. The student will be able to:
14.01	Identify and select microphones for production.
14.02	Place microphones for maximum effect.
14.03	Describe parts of sound recording and playback devices.
14.04	Operate sound recording and playback devices.
14.05	Describe parts of an audio mixing console.
14.06	Operate an audio mixing console.
15.0	Perform character generation (CG). The student will be able to:
15.01	Create television graphics using industry standard equipment.
15.02	Understand television graphics safe zone and color design.
15.03	Create CGs adhering to the rule of thirds.
16.0	Operate editing software. The student will be able to:

CTE Standards and Benchmarks

16.01	Generate graphics using editing software.
16.02	Combine media elements into a final product.
16.03	Select the best source material to achieve program goals.
16.04	Edit a sequence for continuity.

**Florida Department of Education
Student Performance Standards**

Course Title: **Television Production Technology 3**
Course Number: **8201530**
Course Credit: **1**

Course Description:

Students will perform lighting tasks, record and edit audio and video, and participate in all aspects of the television production process – from the initial stages of program creation to final editing.

CTE Standards and Benchmarks

17.0 Utilize the Internet to gather data for a planned production. The student will be able to:

17.01 Use the Internet to research specific information on a production topic as assigned.

17.02 Derive online information for use in graphs and charts in a production.

18.0 Demonstrate industry accepted skills for studio and remote production. The student will be able to:

18.01 Demonstrate skills in selecting production topics.

18.02 Determine quality of production topics.

18.03 Operate television studio equipment.

18.04 Adhere to production deadlines.

19.0 Assemble a lighting set up using modifiers (e.g., flags, reflectors, diffusers or artificial lights). The student will be able to:

19.01 Create shadow to add depth and dimension using appropriate modifiers.

20.0 Demonstrate correct use of equipment used in television production. The student will be able to:

20.01 Properly manage program inventory.

20.02 Demonstrate basic equipment maintenance and management.

21.0 Perform intermediate digital audio and video recording and editing operations. The student will be able to:

CTE Standards and Benchmarks

21.01 Identify and describe different video recording devices.

21.02 Control audio mix and effects.

21.03 Export a file appropriately for a variety of distribution methods.

21.04 Utilize keyframes in editing.

21.05 Perform time code calculations.

**Florida Department of Education
Student Performance Standards**

Course Title: **Television Production Technology 4**
Course Number: **8201540**
Course Credit: **1**

Course Description:

Students will perform advanced lighting tasks for television productions, demonstrate the mastery of competencies related to audio and video recording and editing operations, interpret scripts for television productions, and collaborate with others as part of the television production team.

CTE Standards and Benchmarks

22.0 Function as a member of a production team. The student will be able to:

22.01 List the job functions of the television production team.

22.02 Operate studio equipment (e.g., CCU, switcher, audio).

22.03 Operate a CCU to correct video signals from studio cameras.

22.04 Execute the four steps of the production process.

22.05 Give and follow directions.

22.06 Set and adhere to production deadlines.

22.07 Receive and respond to client comments and feedback.

23.0 Select special effects lighting for a planned production. The student will be able to:

23.01 Use lighting instruments to create the mood for a production.

23.02 Use appropriate lighting accessories (gels, reflectors, etc.) to enhance a production.

24.0 Create a variety of television programming. The student will be able to:

24.01 Write, produce, direct and edit news programs.

24.02 Write, produce, direct and edit editorials.

24.03	Write, produce, direct and edit feature programs.
24.04	Write, produce, direct and edit interview programs.
24.05	Write, produce, direct and edit commercials.

**Florida Department of Education
Student Performance Standards**

Course Title: **Television Production Technology 5**
Course Number: **8201550**
Course Credit: **1**

Course Description:

This course requires students to perform advanced audio and video recording and editing operations; students will collaborate with other members of the production team to create a television program.

CTE Standards and Benchmarks	
25.0	Research and select one or more areas of television production for specialization. The student will be able to:
25.01	Survey and select area(s) for specialization in television production.
25.02	Perform research on position availability, training requirements and postsecondary institutes with programs of study or emphasis in the selected specialization.
26.0	Perform advanced audio and video recording and editing operations in a studio situation. The student will be able to:
26.01	Set up digital audio and/or digital video editing equipment and or software.
26.02	Set up digital audio and/or digital video recording and playback devices.
27.0	Create a television program. The student will be able to:
27.01	Plan a television program.
27.02	Write a television program.
27.03	Direct a television program.
27.04	Edit a television program.
27.05	Record a television program.
28.0	Demonstrate an independent level of proficiency in the selected area of specialization. The student will be able to:
28.01	Demonstrate engagement in all aspects of the production process and assist peers, as needed.

28.02	Identify deficient areas of knowledge/skill level and make plan for improvement.
28.03	Set personal goals for achievement in Television Production.
28.04	Track skill acquisition and progress toward personal goals.

**Florida Department of Education
Student Performance Standards**

Course Title: **Television Production Technology 6**
Course Number: **8201560**
Course Credit: **1**

Course Description:

Students demonstrate competency in advanced scriptwriting, program production, and advanced digital audio and video recording and editing operations.

CTE Standards and Benchmarks	
29.0	Demonstrate advanced scriptwriting techniques. The student will be able to:
29.01	Write a broadcast script for a program with a minimum 10 minute program length.
29.02	Use the correct script format for the program selected (documentary, drama, infomercial, etc.).
30.0	Apply production skills by producing a program. The student will be able to:
30.01	Plan a television program with a minimum 10 minute program length.
30.02	Write a television program with a minimum 10 minute program length.
30.03	Direct a television program with a minimum 10 minute program length.
30.04	Record a television program with a minimum 10 minute program length.
30.05	Edit a television program with a minimum 10 minute program length.
30.06	Distribute the television program with the proper settings for the medium.
31.0	Perform advanced digital audio and video recording and editing operations. The student will be able to:
31.01	Organize assets in digital format.
31.02	Set-up video input and output devices.
31.03	Perform insert edits in a non-linear format.

**Florida Department of Education
Student Performance Standards**

Course Title: **Television Production Technology 7**
Course Number: **8201570**
Course Credit: **1**

Course Description:

Students will demonstrate skills related to Electronic News Gathering (ENG) and Electronic Field Production (EFP) equipment functions. The student will select an area of television production for specialization.

CTE Standards and Benchmarks

32.0 Perform basic maintenance for lighting instruments. The student will be able to:

32.01 Identify the correct bulb for a light fixture.

32.02 Replace a bulb in a fixture.

32.03 Use the appropriate gear and/or techniques to ensure that the bulbs are not exposed to human contact (avoid oils on light surfaces).

33.0 Perform Electronic News Gathering (ENG) and Electronic Field Production (EFP) equipment functions. The student will be able to:

33.01 List and describe ENG and EFP equipment components.

33.02 Set up equipment for field production.

33.03 Operate equipment during field production segments.

**Florida Department of Education
Student Performance Standards**

Course Title: **Television Production Technology 8**
Course Number: **8201580**
Course Credit: **1**

Course Description:

Students will plan, produce, and direct a complete television production/program.

CTE Standards and Benchmarks	
34.0	Translate written script into a full television production. The student will be able to:
34.01	Produce a television program from a written script.
35.0	Create and maintain a portfolio with embedded production media. The student will be able to:
35.01	Curate and select work that demonstrates the skills needed in the industry.
35.02	Select a distribution method that allows access to your work.
36.0	Function at an independent level with proficiency in one area of television production. The student will be able to:
36.01	Survey and select an area of specialization in television production.
36.02	Perform at an independent level of proficiency in area of specialization.
36.03	Create useable end products in the area of specialization.
36.04	Create training materials in the area of specialization.
36.05	Demonstrate the correct application and use of the selected area of specialization.
37.0	Research a specific career in television. The student will be able to:
37.01	Perform career research on a specific area of television production.
37.02	Write a report on the specific career; include salary, job prospects, and educational requirements.
37.03	Prepare a résumé for employment in the specific career selected.

CTE Standards and Benchmarks

37.04 Demonstrate a high level of proficiency in the specific career area selected.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Media/Multimedia Design
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8201600
CIP Number	0609070220
Grade Level	9-12
Program Length	5 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	SkillsUSA, FBLA
SOC Codes (all applicable)	27-1014 – Multimedia Artists and Animators
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for work as multimedia artists and animators.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, practical experiences in webpage design and interactive presentation development, testing and production. Specialized skills in multimedia presentations such as video editing, audio features, and simple animation and authoring software are used to produce a variety of interactive multimedia presentations.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of five (5) credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8201210	Digital Media/Multimedia Foundations 1	PHOTOG @7 7G BUS ED 1 @2 COMM ART @7 7G COMPU SCI 6 DIGI MEDIA 7G PRINTING @7 7G SECRETAR 7 G TEC ED 1 @2 ENG&TEC ED1@2 TEC ELEC @7 TV PRO TEC @7 7G VOE @7	1 credit	27-1014	2	CT
8201220	Digital Media/Multimedia Foundations 2	BUS ED 1 @2 COMM ART @7 7G COMPU SCI 6	1 credit	27-1014	2	CT
8201230	Digital Media/Multimedia Foundations 3	DIGI MEDIA 7G PRINTING @7 7G	1 credit	27-1014	3	CT
8201610	Digital Media/Multimedia Web Production	SECRETAR 7 G TEC ED 1 @2 ENG&TEC ED1@2	1 credit	27-1014	3	CT
8201620	Digital Media/Multimedia Motion Graphics Production	TEC ELEC @7 TV PRO TEC @7 7G VOE @7	1 credit	27-1014	3	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

Digital Media/Multimedia Foundations 1

- 01.0 Demonstrate knowledge of presentation production issues.
- 02.0 Demonstrate basic computer knowledge.
- 03.0 Demonstrate knowledge of still images and time-based media production
- 04.0 Demonstrate knowledge of photo and time-based editing software.

Digital Media/Multimedia Foundations 2

- 05.0 Demonstrate proficiency in advanced design.
- 06.0 Demonstrate understanding of color modes.
- 07.0 Demonstrate proficiency in using fonts for advanced design.
- 08.0 Demonstrate proficiency in using illustration software.
- 09.0 Demonstrate knowledge of design layout software.

Digital Media/Multimedia Foundations 3

- 10.0 Demonstrate proficiency in using presentation software and equipment to produce a complex presentation.
- 11.0 Develop proficiency in using authoring software.
- 12.0 Demonstrate mastery of design layout software.

Digital Media/Multimedia Web Production

- 13.0 Demonstrate proficiency in preliminary webpage design.
- 14.0 Demonstrate understanding of HTML and CSS.
- 15.0 Demonstrate proficiency in authoring software for webpage design.
- 16.0 Demonstrate knowledge of interactive animation techniques
- 17.0 Demonstrate proficiency using all media to create an advertising campaign.
- 18.0 Participate in work-based learning experiences or simulation.

Digital Media/Multimedia Motion Graphics Production

- 19.0 Demonstrate proficiency using video editing software and equipment.
- 20.0 Demonstrate knowledge of keyframe based animation techniques.
- 21.0 Identify key animation principles (e.g., momentum, overshoot, bounce, etc.).
- 22.0 Prepare graphics for time-based media.
- 23.0 Identify broad range of roles for time-based media production.
- 24.0 Demonstrate proficiency using all media to create a promotional campaign.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Media/Multimedia Foundations 1
Course Number: 8201210
Course Credit: 1

Course Description:

This course provides competencies in presentation production issues, basic computer knowledge, digital still photography, and photo editing software.

CTE Standards and Benchmarks

01.0	Demonstrate knowledge of presentation production issues. The student will be able to:
01.01	Identify characteristics of design for digital media (e.g., web, animation, video, and audio).
01.02	Identify presentation materials (slides/handouts) and presentation marketing formats (e.g., social media, print media, newspaper, billboards, posters, magazines, television, movies, computer presentations, web banners, advertisements and webpages).
01.03	Identify design characteristics (e.g., fonts, size, color modes, backgrounds) that are suited for each type of design format and material.
01.04	Demonstrate knowledge of design theory such as hierarchy, design composition, color theory, typography, balance, repetition, etc.
01.05	Demonstrate knowledge of copyright laws (e.g., copyright statutes, disclaimers, filing procedures).
01.06	Research and identify job titles and skills needed for career positions in multimedia design using information from the U.S. Bureau of Labor Statistics (www.bls.gov).
01.07	Demonstrate understanding of multimedia file formats (e.g., EPS, PDF, TIFF, JPEG, PNG, ASCII, MPEG, MIDI, AVI, WAV) and knowledge of image size when scanning and saving files for use in different design types (print, web, computer, television, mobile devices).
01.08	Demonstrate knowledge of presentation vocabulary and terms.
02.0	Demonstrate basic computer knowledge. The student will be able to:
02.01	Identify basic computer components (e.g., CPU, monitor, keyboard, resolution).
02.02	Demonstrate understanding of computer specifications.
02.03	Demonstrate best practices of computer safety and ergonomics.
02.04	Demonstrate knowledge of computer operating systems and platforms.

CTE Standards and Benchmarks

02.05	Demonstrate use of internal and external drives/storage and data backup.
02.06	Identify possible software and hardware malfunctions and perform basic troubleshooting operations.
02.07	Identify characteristics of software for print, photography, web, animation, video and audio.
03.0	Demonstrate knowledge of still images and time-based media production. The student will be able to:
03.01	Demonstrate knowledge of digital camera types for capturing stills and video.
03.02	Demonstrate knowledge of digital photography composition and time-based media.
03.03	Demonstrate knowledge of digital camera supports (e.g., tripod, grips, holds).
03.04	Identify parts of a digital camera (e.g., lens, sensor, battery).
03.05	Understand digital camera menus and navigation.
03.06	Demonstrate knowledge of auto modes and settings (e.g., F-stops, speed, ISO).
03.07	Demonstrate knowledge of manual modes and settings (e.g., F-stops, speed, ISO).
03.08	Demonstrate understanding of white balance and lighting.
03.09	Demonstrate proper care, use, and storage of digital cameras.
03.10	Create both a digital and printed portfolio.
04.0	Demonstrate knowledge of photo and time-based editing software. The student will be able to:
04.01	Demonstrate understanding of file formats and storage options.
04.02	Identify the parts of the software interface.
04.03	Demonstrate the ability to use each of the basic tool sets.
04.04	Demonstrate the ability to import, export and save images.
04.05	Demonstrate understanding of layers and channels.
04.06	Demonstrate understanding of filters, effects and plug-ins.
04.07	Demonstrate understanding of file presets.

CTE Standards and Benchmarks

04.08 Demonstrate the ability to select portions of an image for manipulation.

04.09 Demonstrate the ability to transform selections and images (crop, scale).

04.10 Demonstrate the ability to color-correct images (brightness, hue, contrast).

04.11 Demonstrate the ability to use tools for image creation and correction.

04.12 Understand non-destructive and destructive operations.

04.13 Develop an awareness to import, paint and export 3D objects and/or Virtual Reality Objects.

04.14 Demonstrate the basic uses of video in photo editing software.

04.15 Plan and develop raster graphic to meet project needs through a formal RFP (request for proposal).

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Media/Multimedia Foundations 2
Course Number: 8201220
Course Credit: 1

Course Description:

This course covers competencies in advanced design, illustration software, color modes, and fonts.

CTE Standards and Benchmarks	
05.0	Demonstrate proficiency in advanced design. The student will be able to:
05.01	Demonstrate knowledge of advanced design.
05.02	Identify design strategies to reach the intended audience.
05.03	Use storyboarding or sketches to plan a design.
05.04	Create formal or informal design layouts using guidelines, colors, fonts, graphics and logos.
05.05	Demonstrate use of authoring software integration.
05.06	Identify compatibility formats (extensions) for authoring software integration.
06.0	Demonstrate understanding of color modes. The student will be able to:
06.01	Demonstrate knowledge of the color process for printing purposes.
06.02	Demonstrate knowledge of color conversion from display to print.
06.03	Demonstrate knowledge of spot colors.
06.04	Demonstrate knowledge of web-safe colors.
06.05	Explain color mode differences (e.g., RGB, CMYK, and HSB).
06.06	Understand accessing color modes from authoring software.
07.0	Demonstrate proficiency in using fonts for advanced design. The student will be able to:

CTE Standards and Benchmarks

07.01	Identify <i>serif</i> and <i>sans-serif</i> fonts.
07.02	Demonstrate knowledge of conversion of fonts to outlines.
07.03	Understand the proprietary copyrights of fonts.
07.04	Demonstrate knowledge of standard font formats (e.g., TrueType, PostScript, OpenType).
07.05	Design and develop a print and/or digital portfolio (e.g., business cards, posters, billboards, magazines, and brochures).
08.0	Demonstrate proficiency in using illustration software. The student will be able to:
08.01	Evaluate industry standard illustration software packages.
08.02	Identify characteristics of vector and bitmap images.
08.03	Demonstrate understanding of the software workspace and navigation (e.g., views, tabs, zoom).
08.04	Demonstrate use of drawing tools to create, combine and edit basic shapes.
08.05	Demonstrate the ability to transform content (e.g., scale, rotation, position).
08.06	Demonstrate understanding of bezier curve and the appropriate tools for manipulation (e.g., direct select, convert anchor point, pen tool, pencil tool, and etc.).
08.07	Demonstrate use of color and painting tools (e.g., patterns, gradients, color palettes).
08.08	Demonstrate the ability to work with type (e.g., formatting, font palette, character panels, and paths).
08.09	Demonstrate use of layers by creating, locking, viewing, pasting, and merging.
08.10	Demonstrate use of blending (gradients and objects).
08.11	Demonstrate use of brushes; download new brushes.
08.12	Explore file exporting options and round-trip workflows with page layout software.
08.13	Demonstrate knowledge of bleed for vector and bitmap design software.
08.14	Plan and develop vector graphic to meet project needs through a formal RFP (Request for Proposal).
09.0	Demonstrate knowledge of design layout software. The student will be able to:
09.01	Identify parts of the software interface.

CTE Standards and Benchmarks

09.02	Demonstrate the ability to customize and navigate the workspace.
09.03	Demonstrate understanding of pre-flightting.
09.04	Work with styles, graphics and objects in a design.
09.05	Set up a document and manage pages within document.
09.06	Demonstrate use of layers, text frames and graphic frames.
09.07	Determine the appropriate use of grids, columns, margins, and bleed.
09.08	Demonstrate the ability to align, transform and group objects.
09.09	Understand typography and text editing.
09.10	Demonstrate understanding of color (e.g., applying, gradients, tint, spot, and management).
09.11	Import and modify graphics (e.g., links, vector/bitmap images, quality, alpha channels).
09.12	Understand output and exporting functions (e.g., proofs, separations, prepress).

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Media/Multimedia Foundations 3
Course Number: 8201230
Course Credit: 1

Course Description:

This course covers competencies in design layout software.

CTE Standards and Benchmarks

10.0	Demonstrate proficiency in using presentation software and equipment to produce a complex presentation. The student will be able to:
10.01	Using authoring/editing software, create a multimedia presentation that incorporates custom raster graphics, vector graphics, typography, color and shapes and good design principles.
10.02	Demonstrate knowledge of the roles and responsibilities of a multimedia production team (e.g., project manager, creative or design director, content experts, writers, graphic designers, animators, sound designers, videographers, interface designers/programmers).
11.0	Develop proficiency in using authoring software. The student will be able to:
11.01	Plan and develop video to meet project needs through a formal RFP (request for proposal).
11.02	Present project for evaluation and make modifications to improve the project.
11.03	Collaborate with team members to plan, edit, evaluate, and present a multimedia presentation or product.
12.0	Demonstrate mastery of design layout software. The student will be able to:
12.01	Plan and develop print package to meet project needs through a formal RFP (request for proposal).

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Media/Multimedia Web Production
Course Number: 8201610
Course Credit: 1

This course covers competencies in webpage design, HTML and CSS, authoring software, animated webpage design, and use the interactive design software.

CTE Standards and Benchmarks	
13.0	Demonstrate proficiency in preliminary webpage design. The student will be able to:
13.01	Determine the objectives and the audience for webpages.
13.02	Identify design strategies to reach and keep an audience.
13.03	Use storyboarding to plan a website.
13.04	Identify styles and other design elements (e.g., backgrounds, colors, fonts, and buttons).
14.0	Demonstrate understanding of HTML and CSS. The student will be able to:
14.01	Interpret HTML coding to identify the structure of an existing webpage
14.02	Develop HTML coding to write a webpage.
14.03	Demonstrate understanding of Cascading Style Sheets (CSS) on an existing webpage.
14.04	Demonstrate compliance with ADA recommendations for all websites created.
14.05	Utilize markup validity to ensure compliance with the W3C for all websites created.
15.0	Demonstrate proficiency in authoring software for webpage design. The student will be able to:
15.01	Demonstrate understanding of photograph compression factors such as transmission speed, color reduction, and browser support.
15.02	Save and export a photograph to the web in the best format for image quality and file size.
15.03	Demonstrate knowledge of image formats related to photos and graphics on the Internet.
15.04	Demonstrate understanding of pixels for web design.

CTE Standards and Benchmarks

15.05	Create webpages for publication.
15.06	Apply style sheets for consistent website design.
15.07	Format text for webpages (e.g., font families, sizes).
15.08	Create and edit images and photographs for webpages using digital imaging software.
15.09	Create and insert buttons into a webpage and test for accuracy.
15.10	Create navigational links.
15.11	Insert audio files into a webpage.
15.12	Create, edit and integrate video files into a webpage.
15.13	Create, edit and integrate animation files into a webpage.
15.14	Create meta-commands and keywords for search engines.
15.15	Optimize page size for effective downloading to browsers.
15.16	Create and incorporate a form into a webpage.
15.17	Edit and test links for accuracy and validity.
15.18	Create several webpages for a portfolio.
16.0	Demonstrate knowledge of interactive animation techniques. The student will be able to:
16.01	Determine the graphic requirements.
16.02	Demonstrate an ability to use type, color, composition, and graphic elements.
16.03	Produce graphic using software with appropriate titling and graphic transitions.
16.04	Edit graphics in the software.
16.05	Demonstrate use of motion tweens for interactive purposes.
16.06	Demonstrate use of shape tweens for interactive purposes.
16.07	Demonstrate basic use of programming code to create interactivity in a website (JavaScript).

CTE Standards and Benchmarks

17.0 Demonstrate proficiency using all media to create an advertising campaign. The student will be able to:

17.01 Use authoring software to plan and create an advertising campaign that includes collateral materials, digital photography, webpages, animation, video, and/or audio.

18.0 Participate in work-based learning experiences or simulation. The student will be able to:

18.01 Participate in work-based learning experiences/simulation in a digital media/multimedia environment.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Media/Multimedia Motion Graphics Production
Course Number: 8201620
Course Credit: 1

Course Description:

This course covers competencies in preparing graphics for animation, video editing, and video post-production.

CTE Standards and Benchmarks	
19.0	Demonstrate proficiency using video editing software and equipment. The student will be able to:
19.01	Demonstrate knowledge of non-linear editing software.
19.02	Identify components of non-linear video editing equipment.
19.03	Set up non-linear video editing equipment.
19.04	Compare offline editing to linear video editing.
19.05	Use storyboarding to plan a short non-linear video project that includes existing video footage with a title, transitions, background sound, voice-over, animation, and rolling credits.
19.06	Use video editing software to create and edit a movie that includes video footage with a title, transitions, background sound, voice-over, and rolling credits and output to video.
19.07	Collaborate with team members to plan, edit, and shoot video footage utilizing advanced video editing techniques and output to video.
19.08	Discuss the use of batch processing and project trimming.
19.09	Plan, create, edit and present a short non-linear movie with title, transitions, sub and virtual clips, sound, background music, voice-over, and credits.
20.0	Demonstrate knowledge of keyframe based animation techniques. The student will be able to:
20.01	Determine the graphic requirements.
20.02	Demonstrate an ability to use type, color, composition, and graphic elements.
20.03	Produce graphic using software with appropriate titling and graphic transitions.
20.04	Edit graphics in the software.

CTE Standards and Benchmarks

20.05	Demonstrate knowledge of difference animation strategies (e.g., straight ahead, pose to pose, and etc.).
20.06	Produce and render a composition with appropriate graphics, titling, audio, color correction, and credits.
20.07	Demonstrate understanding of different layer types.
20.08	Identify properties that can be animated with key frames.
20.09	Demonstrate use of different key frames and how they affect property animation (e.g., easy ease, ease in, ease out, hold frame, etc.).
21.0	Identify key animation principles (e.g., momentum, overshoot, bounce, etc.). The student will be able to:
21.01	Demonstrate an understanding of key terminology.
21.02	Demonstrate use of graph editor to demonstrate animation principles.
21.03	Demonstrate use of speed graph editor to demonstrate animation principles.
22.0	Prepare graphics for time-based media. The student will be able to:
22.01	Incorporate multiple graphic elements into an effective production.
22.02	Identify the advantages and disadvantages of using pixel or vector based graphics in motion graphics production.
22.03	Identify appropriate uses of pixel based graphics in animation projects.
22.04	Identify appropriate use of vector based graphics in animation projects
22.05	Prepare pixel and vector based graphics for use in animation project.
23.0	Identify broad range of roles for time-based media production. The student will be able to:
23.01	Demonstrate knowledge of the pre-production, production, and post-production process.
24.0	Demonstrate proficiency using all media to create a promotional campaign. The student will be able to:
24.01	Use authoring software to plan and create a promotional campaign that includes collateral materials, digital photography, webpages, animation, video, and/or audio.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

SkillsUSA and Future Business Leaders of America (FBLA) are the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Cinema Production
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8201700
CIP Number	0650060214
Grade Level	9-12
Program Length	5 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	SkillsUSA
SOC Codes (all applicable)	27-2012 – Producers and Directors 27-4011 – Audio and Video Equipment Technicians 27-4031 – Camera Operators, Television, Video, and Motion Picture 27-4032 – Film and Video Editors
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment in the Digital Cinema Production field as equipment operators, camera assistants, sound equipment operators, editing equipment operators, set builders, grips and lighting equipment operators and visual effect artists.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, the history of cinema, the use of photo editing software, production writing and management, art direction, lighting, cinematography, audio production, postproduction and stereography.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of five (5) courses.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8201010	Digital Cinema Production 1	TEC ED 1 @ 2 ENG&TEC ED1@2 TV PRO TEC @7 7G	1 credit	27-2012	2	CT
8201020	Digital Cinema Production 2		1 credit	27-2012	2	CT
8201030	Digital Cinema Production 3		1 credit	27-4011	2	CT
8201040	Digital Cinema Production 4		1 credit	27-4031	2	CT
8201050	Digital Cinema Production 5		1 credit	27-4031	2	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards-

After successfully completing this program, the student will be able to perform the following:

Digital Cinema Production 1

- 01.0 Understand the history of cinema.
- 02.0 Understand intellectual property rights, copyright laws and plagiarism as each applies to creative assets.
- 03.0 Understand the production process.
- 04.0 Demonstrate proficiency in computer skills.
- 05.0 Demonstrate knowledge of production writing as it relates to narrative filmmaking.
- 06.0 Demonstrate knowledge of the post-production process.
- 07.0 Demonstrate knowledge of post-production editing software.

Digital Cinema Production 2

- 08.0 Demonstrate knowledge of production management.
- 09.0 Demonstrate knowledge of storyboarding.
- 10.0 Demonstrate understanding of production set protocol.
- 11.0 Demonstrate basic audio production.
- 12.0 Demonstrate understanding of lighting principles.
- 13.0 Demonstrate understanding of lighting fixtures.

Digital Cinema Production 3

- 14.0 Demonstrate understanding of special effects lighting techniques and equipment.
- 15.0 Demonstrate understanding of grip principles.
- 16.0 Demonstrate understanding of camera movement.
- 17.0 Demonstrate knowledge of cinematography.
- 18.0 Demonstrate knowledge of directing.

Digital Cinema Production 4

- 19.0 Demonstrate knowledge of cameras.
- 20.0 Demonstrate knowledge of art direction.
- 21.0 Demonstrate knowledge of image editing software.

Digital Cinema Production 5

- 22.0 Demonstrate knowledge of audio editing software.
- 23.0 Demonstrate knowledge of Digital Content distribution.
- 24.0 Demonstrate knowledge of color correction software.
- 25.0 Demonstrate knowledge of compositing software.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Cinema Production 1
Course Number: 8201010
Course Credit: 1

Course Description:

This course covers competencies in the history of cinema, production process, intellectual property rights, computer skills, video editing software, and production writing.

CTE Standards and Benchmarks	
01.0	Understand the history of cinema. The student will be able to:
01.01	Understand the history and innovations of the motion picture industry.
01.02	Identify the major technological changes that impacted the motion picture industry (silent, sound, color, widescreen, digital).
01.03	Identify the major films and filmmakers that contributed to the aesthetic development of motion pictures.
02.0	Understand intellectual property rights, copyright laws and plagiarism as each applies to creative assets. The student will be able to:
02.01	Describe the limits and expectations of copyright protection.
02.02	Understand the use of “fair use” and “fair dealing.”
02.03	Understand the transfer and licensing of creative works.
02.04	Understand the use of “exclusive rights” to intellectual creations.
02.05	Understand the importance of digital watermarks.
03.0	Understand the production process. The student will be able to:
03.01	Identify the job titles associated with the filmmaking process.
03.02	Identify various tools and equipment used to produce narrative productions.
03.03	Understand the stages of production.
03.04	Identify the departments of a production studio.

03.05	Understand production and department hierarchy.
03.06	Demonstrate and understand proper set protocol.
03.07	Understand production terms.
03.08	Create and organize production paperwork for use in pitch and/or preproduction meetings.
03.09	Demonstrate the proper use of standard filmmaking forms.
04.0	Demonstrate proficiency in computer skills. The student will be able to:
04.01	Identify and understand workstation hardware and peripherals.
04.02	Demonstrate understanding of computer performance specifications.
04.03	Compare and contrast differences between business and consumer workstations.
04.04	Demonstrate best practices of computer safety and ergonomics.
04.05	Demonstrate understanding of operating systems.
04.06	Understand how to upgrade a workstation.
04.07	Perform storage management operations (project/file).
04.08	Identify the importance of computer maintenance.
04.09	Demonstrate ability to troubleshoot computer hardware and software issues.
04.10	Perform proper file organization and file naming when uploading and downloading files.
05.0	Demonstrate knowledge of production writing as it relates to narrative filmmaking. The student will be able to:
05.01	Understand the role of a scriptwriter in the preproduction process.
05.02	Understand the importance of target audiences, markets, and demographics when writing a script.
05.03	Identify the elements of a script.
05.04	Develop the intended message and/or theme of a script.
05.05	Demonstrate ability to write a treatment.
05.06	Demonstrate ability to write a professionally formatted short script.

05.07	Understand how genre conventions affect a story.
05.08	Identify the major characters and setting of a story.
05.09	Understand the basic story structure of a feature film (3 Act structure, Hero's Journey).
05.10	Demonstrate an understanding of character profiles.
05.11	Create a character profile.
06.0	Demonstrate knowledge of the post-production process. The student will be able to:
06.01	Identify the psychological effects of different types of edits.
06.02	Demonstrate understanding of picture editing techniques
06.03	Demonstrate an understanding of transitions.
06.04	Demonstrate an understanding of sound editing techniques.
06.05	Understand the process of syncing sound elements to picture elements.
06.06	Create sound effects using live Foley techniques.
06.07	Identify the job titles and roles of the postproduction department.
06.08	Formulate sound design for required sound effects and dialogue replacement to complete a motion picture soundtrack.
06.09	Record dialogue replacement lines.
07.0	Demonstrate knowledge of postproduction editing software. The student will be able to:
07.01	Demonstrate understanding of file formats and storage options.
07.02	Identify parts of the software interface (menus/palettes).
07.03	Demonstrate ability to use each of the basic tool sets.
07.04	Demonstrate ability to import, export, and save projects.
07.05	Demonstrate understanding of layers and basic compositing.
07.06	Edit a project using filters, effects and plug-ins.
07.07	Demonstrate understanding of the rendering process.

07.08 Demonstrate ability to manipulate digital images (crop, scale, color, opacity, and keyframing).
07.09 Understand non-destructive and destructive operations.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Cinema Production 2
Course Number: 8201020
Course Credit: 1

Course Description:

This course covers competencies in production management, character development, storyboarding, lighting, and audio.

CTE Standards and Benchmarks	
08.0	Demonstrate knowledge of production management. The student will be able to:
08.01	Demonstrate ability to breakdown a script into production elements (cast, props).
08.02	Understand the job of a production manager.
08.03	Create a production schedule.
08.04	Create a sample budget for a production.
08.05	Demonstrate ability to write a casting call.
08.06	Understand the casting process.
08.07	Scout a location and perform a site survey.
08.08	Understand the process of acquiring a permit for shooting on location.
08.09	Understand the role trade unions play in the budgeting process.
09.0	Demonstrate knowledge of storyboarding. The student will be able to:
09.01	Describe visual storytelling and how storyboards are used during production.
09.02	Apply camera framing and camera movement to a storyboard.
09.03	Understand the importance of a shot list.
09.04	Create a storyboard using industry techniques.

09.05	Identify the potential markets, brand partners, and target audiences for a motion picture project
09.06	Effectively communicate a message or pitch.
10.0	Demonstrate understanding of production set protocol. The student will be able to:
10.01	Select proper lighting gear for the needs of a production.
10.02	Demonstrate ability to set up lights.
10.03	Demonstrate ability to use common hand and radio signals.
10.04	Demonstrate proper use of cables (wrapping, layout, securing) and cable labeling methods.
10.05	Follow proper lighting safety protocols.
10.06	Supervise hanging, circuiting, and focusing lights for production.
11.0	Demonstrate basic audio production. The student will be able to:
11.01	Demonstrate how to set up a recording environment.
11.02	Utilize digital audio recording hardware.
11.03	Demonstrate understanding of the proper use of microphones.
11.04	Demonstrate knowledge of audio codecs and media.
11.05	Demonstrate the ability to record location sounds.
11.06	Understand basic audio terminology (frequency, pitch, amplitude, signal to noise ratio, sampling rate, reverberation).
11.07	Properly set up and utilize audio equipment (e.g., microphones, boom poles, speakers, mixers).
11.08	Explain basic acoustics.
11.09	Evaluate audio recording needs of a specific production.
11.10	Determine appropriate audio recording needs for specific locations.
11.11	Configure and operate sound recording and playback systems to meet performance needs.
11.12	Properly set up microphones for a specific scene.
11.13	Understand the history of audio recording in motion pictures.

12.0	Demonstrate understanding of lighting principles. The student will be able to:
12.01	Identify the job descriptions of the lighting crew.
12.02	Identify relevant lighting cues from scripts and/or storyboards.
12.03	Create a lighting plan.
12.04	Demonstrate an understanding of exposure through the manipulation of F-Stops, ISO, and shutter speed.
12.05	Demonstrate understanding of contrast ratio.
12.06	Demonstrate knowledge of color temperature.
12.07	Demonstrate use of a light meter.
12.08	Understand the Inverse Square Law.
12.09	Determine lighting equipment needs for a planned production.
12.10	Demonstrate the proper use of color charts/white balance cards during production.
13.0	Demonstrate understanding of lighting fixtures. The student will be able to:
13.01	Understand the difference between Fresnel and open-faced lights.
13.02	Demonstrate understanding of various lighting gear (e.g., LED, fluorescents, HMI and tungsten).
13.03	Demonstrate an understanding of ambient and practical lighting.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Cinema Production 3
Course Number: 8201030
Course Credit: 1

Course Description:

This course covers competencies in camera movement, cinematography and directing, special effects lighting, grips, dollies, cranes, jibs, and arms.

CTE Standards and Benchmarks	
14.0	Demonstrate understanding of special effects lighting techniques and equipment. The student will be able to:
14.01	Demonstrate the ability to create lighting effects.
14.02	Understand the challenges of lighting a green/blue screen.
14.03	(Optional) Demonstrate the proper use of fog machines.
14.04	Demonstrate both high-key and low-key lighting techniques.
14.05	Demonstrate how to incorporate lighting into exterior day setups.
14.06	Demonstrate use of gels and diffusions.
14.07	Demonstrate the use of hard (direct) lighting and soft (indirect) lighting.
15.0	Demonstrate understanding of grip principles. The student will be able to:
15.01	Identify the descriptions of the grip crew.
15.02	Identify the functions of dollies, cranes and other camera mounts as required for production.
15.03	Identify relevant grip cues from production notes.
16.0	Demonstrate understanding of camera movement. The student will be able to:
16.01	Utilize various camera stabilizers and rigs to create moving shots (e.g., cranes, gimbals, jibs, dollies, sliders, arms, and etc.).
16.02	Demonstrate proper safety using camera stabilizers and rigs.

16.03	Identify commonly used camera stabilizers and rigs.
16.04	Understand the proper use of drones and corresponding drone laws.
16.05	Demonstrate proper handheld camera techniques.
16.06	Demonstrate proper focus pulling techniques.
17.0	Demonstrate knowledge of cinematography. The student will be able to:
17.01	Identify different responsibilities within the camera department.
17.02	Execute a lighting plan.
17.03	Understand the principals of photography.
17.04	Compare the techniques used in studio and location shooting.
17.05	Manage resources and personnel in order to meet production deadlines.
17.06	Understand the difference between film and digital camera technology.
18.0	Demonstrate knowledge of directing. The student will be able to:
18.01	Identify the psychological effects of different types of angles (composition).
18.02	Analyze a script and create a shot list.
18.03	Demonstrate knowledge of blocking, dynamic composition, and screen direction.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Cinema Production 4
Course Number: 8201040
Course Credit: 1

Course Description:

This course covers competencies in and use of cameras, art direction, and image editing software.

CTE Standards and Benchmarks

19.0	Demonstrate knowledge of cameras. The student will be able to:
19.01	Demonstrate knowledge of mechanics and parts of the camera (shutter, f/stops, lenses, etc.).
19.02	Analyze the aesthetic needs of a shot and accomplish them by using standard industry equipment.
19.03	Analyze production requirements to determine camera equipment needs.
19.04	Understand the difference between zoom and prime lenses.
19.05	Demonstrate the proper use of neutral density filters and polarizers.
19.06	Control lens, focal length, aperture, depth of field and exposure to obtain required effects.
19.07	Control camera movement to obtain required effects.
19.08	Perform basic and routine maintenance on camera equipment.
19.09	Select appropriate acquisition formats (media, compression and frame rates) for a production.
20.0	Demonstrate knowledge of art direction. The student will be able to:
20.01	Demonstrate the ability to create moods through lighting and art direction.
20.02	Understand the importance of art direction as it pertains to character development and theme.
20.03	Understand the use of color in art direction.
21.0	Demonstrate knowledge of image editing software. The student will be able to:

21.01	Identify file formats and storage options.
21.02	Identify parts of the software interface (menus/palettes).
21.03	Use each of the basic tool sets.
21.04	Import, export and save images
21.05	Edit using layers and channels.
21.06	Use filters, effects and plug-ins.
21.07	Explain file presets.
21.08	Select portions of an image for manipulation.
21.09	Transform selections and images (crop, scale).
21.10	Color correct images (brightness, hue, contrast).
21.11	Utilize brushes for image creation and correction.
21.12	Understand non-destructive and destructive operations.
21.13	Demonstrate knowledge of the basics of still photography for photo editing software (e.g., composition, resolution, ISO, F-stop, and shutter).
21.14	Create a digital watermark.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Cinema Production 5
Course Number: 8201050
Course Credit: 1

Course Description:

This course covers competencies in advanced cinematic technology and production, including color theory and sound design.

CTE Standards and Benchmarks

22.0	Demonstrate knowledge of audio editing software. The student will be able to:
22.01	Identify file formats and storage options.
22.02	Identify parts of the software interface (menus, tools and palettes).
22.03	Use software features such as import, export and saving audio.
22.04	Utilize multiple audio tracks.
22.05	Perform basic edits using filters, effects, plug-ins, file presets and rendering.
22.06	Operate software to edit, cut and delete audio.
22.07	Understand non-destructive and destructive operations.
22.08	Synchronize sound effects and ADR to picture elements.
22.09	Create a mix down.
23.0	Demonstrate knowledge of Digital Content distribution. The student will be able to:
23.01	Identify parts of the software interface (menus/palettes).
23.02	Demonstrate an understanding of the formats and codes used for online streaming services.
23.03	Understand the purpose of specific project deliverables when delivering content to clients or distributors.
23.04	Upload content for a specific viewing audience.

23.05	Use metadata and watermarking strategies to protect and identify their work.
23.06	Understand the process of encoding and compression.
23.07	Create an online portfolio of their best work for potential clients and employers.
23.08	Understand the network associated with product distribution.
23.09	Understand the role streaming services play in the film distribution process.
23.10	Identify the major players involved in the distribution and exhibition of motion pictures.
23.11	Understand the importance of film festivals in the exhibition/distribution process.
23.12	Understand the role movie theaters play in the motion picture business.
24.0	Demonstrate knowledge of color correction software. The student will be able to:
24.01	Identify parts of the software interface (menus/palettes).
24.02	Describe and use basic tool sets.
24.03	Edit using software features such as import, export and file saving.
24.04	Explain color balance, color theory, and channels.
24.05	Create masks and mattes.
24.06	Understand the use and operation of scopes and waveforms.
24.07	Demonstrate the use of LUTs (look up tables) for color grading.
24.08	Demonstrate tracking as it relates to color correction.
24.09	Demonstrate ability to use color correction to match shots in a scene.
24.10	Understand how color correction can be used to enhance the mood of a scene or project.
25.0	Demonstrate knowledge of compositing software. The student will be able to:
25.01	Identify parts of the software interface (menus/palettes).
25.02	Describe and use basic tool sets.
25.03	Edit using software features such as import, export and file saving.

25.04	Understand basic animation using effects presets.
25.05	Perform edits to animate text and layers.
25.06	Utilize rotoscoping tools for advanced effects.
25.07	Demonstrate how to animate masks.
25.08	Demonstrate motion tracking.
25.09	Demonstrate the ability to composite using green screens.
25.10	Demonstrate the process to render and output content.
25.11	Understand the history of compositing and special effects production (both photographic and digital).
25.12	Demonstrate the compositing integration of rendered 3D animation with video.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Course Title: Careers in Fashion and Interior Design
Course Type: Orientation/Exploratory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Middle School

Course Number	8209100
CIP Number	0404050107
Grade Level	6-8
Course Length	Semester
Teacher Certification	Refer to the Course Structure section.
CTSO	FCCLA
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Arts, A/V Technology and Communication career cluster. The content includes, but is not limited to, the development of leadership skills, communication skills, and employability skills; resource management; exploration of design careers; working with textiles and elements of design; basic sewing skills; making clothing choices; technology in the design industry; and, the completion of projects related to fashion and interior design. Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8209100	Careers in Fashion and Interior Design	FAM CON SC 1	Semester

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate leadership skills.
- 02.0 Demonstrate employability skills as they relate to the design industry.
- 03.0 Demonstrate effective communication skills.
- 04.0 Analyze careers in the design industry.
- 05.0 Select and use tools and equipment.
- 06.0 Identify characteristics and care of textiles.
- 07.0 Explain the elements and principles of design.
- 08.0 Explain how environmental factors impact design.
- 09.0 Demonstrate basic sewing skills.
- 10.0 Analyze clothing choices.
- 11.0 Develop a project related to fashion.
- 12.0 Analyze interior design choices.
- 13.0 Develop a project related to interior design.
- 14.0 Utilize technology as it relates to the design industry.
- 15.0 Demonstrate the skills involved in effective resource management.

**Florida Department of Education
Student Performance Standards**

Course Title: Careers in Fashion and Interior Design
Course Number: 8209100
Course Length: Semester

Course Description:

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in interior design and fashion design. The content includes, but is not limited to, the development of leadership skills, communication skills, and employability skills; resource management; exploration of design careers; working with textiles and elements of design; basic sewing skills; making clothing choices; technology in the design industry; and, the completion of projects related to fashion and interior design.

CTE Standards and Benchmarks

01.0 Demonstrate leadership skills. The student will be able to:

- 01.01 Identify roles and responsibilities of members of professional and community service organizations, including career and technical student organizations.
- 01.02 Work cooperatively as a group member to achieve organizational goals.
- 01.03 Demonstrate leadership roles and organizational responsibilities.
- 01.04 Identify and utilize the planning process.
- 01.05 Develop a personal growth project.

02.0 Demonstrate employability skills as they relate to the design industry. The student will be able to:

- 02.01 Identify personal talents and abilities that can contribute to positive self-esteem and success in the workplace.
- 02.02 Practice teamwork skills.
- 02.03 Practice employability skills.
- 02.04 Practice positive work ethics and identify negative work ethics.
- 02.05 Exhibit work expectations of an employer in the design industry.
- 02.06 Apply math, reading, science, and critical thinking skills as they relate to the design industry.

03.0 Demonstrate effective communication skills. The student will be able to:

CTE Standards and Benchmarks

03.01 Describe why communication is the basis for all relationships.

03.02 Distinguish between non-assertive, assertive, and aggressive communication.

03.03 Demonstrate communication skills that promote positive relationships in the workplace.

03.04 Practice active listening skills.

03.05 Utilize conflict resolution skills.

04.0 Analyze careers in the design industry. The student will be able to:

04.01 Describe careers in the design industry.

04.02 Classify careers from entry level to professional level.

04.03 Explore entrepreneurship opportunities in the design industry.

04.04 Research and present information on a design career to include roles and responsibilities, employment opportunities and requirements for education and training.

05.0 Select and use tools and equipment. The student will be able to:

05.01 Identify and select the appropriate tool for an assignment.

05.02 Demonstrate the proper and safe use of tools and equipment.

05.03 Practice care and maintenance of tools and equipment.

06.0 Identify characteristics and care of textiles. The student will be able to:

06.01 Identify a variety of fabrics through tactile activities.

06.02 Compare and contrast natural and synthetic fabrics.

06.03 Recognize types of fabric construction.

06.04 Identify fabrics appropriate for various purposes.

07.0 Explain the elements and principles of design. The student will be able to:

07.01 Define and illustrate the elements of design.

07.02 Describe a color wheel and its use in design.

CTE Standards and Benchmarks	
07.03	Recognize basic color schemes.
07.04	Research the psychology of color.
07.05	Define and illustrate the principles of design.
08.0	Explain how environmental factors impact design. The student will be able to:
08.01	Define green design, sustainable design, and life cycle cost.
08.02	Research eco-friendly design products.
08.03	Examine the positive and negative impact that a design product has on the environment.
09.0	Demonstrate basic sewing skills. The student will be able to:
09.01	Identify and give the purpose of sewing machine parts.
09.02	Demonstrate math skills as they relate to sewing.
09.03	Demonstrate the threading of a sewing machine.
09.04	Demonstrate straight stitching.
09.05	Identify and demonstrate various stitch length and width selections.
09.06	Interpret written instructions and construct a basic sewing project.
10.0	Analyze clothing choices. The student will be able to:
10.01	Explain the impact of trends and social climates on fashion styles.
10.02	Identify appropriate clothing styles for various events.
10.03	Identify factors that impact clothing costs.
10.04	Demonstrate the procedure for recording accurate body measurements.
10.05	Analyze proper fit.
11.0	Develop a project related to fashion. The student will be able to:
11.01	Select materials and supplies for a fashion project.

CTE Standards and Benchmarks

11.02 Calculate the costs of a given fashion project.

11.03 Interpret written directions for constructing a fashion project.

11.04 Apply math skills and construct a fashion project.

12.0 Analyze interior design choices. The student will be able to:

12.01 Explain the impact of political and social climates on decorating styles.

12.02 Identify characteristics of furnishing styles.

12.03 Identify factors that impact furnishing choices.

13.0 Develop a project related to interior design. The student will be able to:

13.01 Apply the principals and elements of design in selecting an interior design project.

13.02 Calculate the costs of an interior design project.

13.03 Interpret written directions for assembling/constructing an interior design project.

13.04 Apply math skills and construct an interior design project.

14.0 Utilize technology as it relates to the design industry. The student will be able to:

14.01 Identify technology utilized in the design industry.

14.02 Analyze technology trends impacting the design industry.

14.03 Utilize technology.

15.0 Demonstrate the skills involved in effective resource management. The student will be able to:

15.01 Identify steps of the decision-making process.

15.02 Distinguish between a need and a want.

15.03 Explain how values and goals affect decisions.

15.04 Develop a budget and savings plan.

15.05 Analyze the relationship between resources and the attainment of lifestyle goals.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

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English Language Development (ELD) Standards Special Notes:

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Career and Technical Student Organization (CTSO)

Florida Family Career and Community Leaders of America (FCCLA) is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or post-secondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: post-secondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Course Title: Careers in Fashion and Interior Design and Career Planning
Course Type: Orientation/Exploratory and Career Planning
Career Cluster: Arts, A/V Technology and Communication

Secondary – Middle School

Course Number	8209200
CIP Number	0404050108
Grade Level	6-8
Course Length	Semester
Teacher Certification	Refer to the Course Structure section.
CTSO	FCCLA
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Arts, A/V Technology and Communication career cluster. The content includes, but is not limited to, the development of leadership skills, communication skills, and employability skills; resource management; exploration of design careers; working with textiles and elements of design; basic sewing skills; making clothing choices; technology in the design industry; and completion of projects related to fashion and interior design.

This course is similar to Careers in Fashion and Interior Design; however, it includes career and education planning competencies.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8209200	Careers in Fashion and Interior Design and Career Planning	FAM CON SC 1	Semester

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate leadership skills.
- 02.0 Demonstrate employability skills as they relate to the design industry.
- 03.0 Demonstrate effective communication skills.
- 04.0 Analyze careers in the design industry.
- 05.0 Select and use tools and equipment.
- 06.0 Identify characteristics and care of textiles.
- 07.0 Explain the elements and principles of design.
- 08.0 Explain how environmental factors impact design.
- 09.0 Demonstrate basic sewing skills.
- 10.0 Analyze clothing choices.
- 11.0 Develop a project related to fashion.
- 12.0 Analyze interior design choices.
- 13.0 Develop a project related to interior design.
- 14.0 Utilize technology as it relates to the design industry.
- 15.0 Demonstrate the skills involved in effective resource management.

Listed below are the standards that must be met to satisfy the requirements of Section 1003.4156, Florida Statutes:

- 16.0 Describe the influences that societal, economic, and technological changes have on employment trends and future training.
- 17.0 Develop skills to locate, evaluate, and interpret career information.
- 18.0 Identify and demonstrate processes for making short and long term goals.
- 19.0 Demonstrate employability skills such as working in a group, problem-solving and organizational skills, and the importance of entrepreneurship.
- 20.0 Understand the relationship between educational achievement and career choices/post-secondary options.
- 21.0 Identify a career cluster and related pathways through an interest assessment that match career and education goals.
- 22.0 Develop a career and education plan that includes short and long-term goals, high school program of study, and post-secondary/career goals.
- 23.0 Demonstrate knowledge of technology and its application in career fields/clusters.

**Florida Department of Education
Student Performance Standards**

Course Title: Careers in Fashion and Interior Design and Career Planning
Course Number: 8209200
Course Length: Semester

Course Description:

This course will assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in interior design and fashion design. The content includes, but is not limited to, the development of leadership skills, communication skills, and employability skills; resource management; exploration of design careers; working with textiles and elements of design; basic sewing skills; making clothing choices; technology in the design industry; and completion of projects related to fashion and interior design.

CTE Standards and Benchmarks

01.0 Demonstrate leadership skills. The student will be able to:

01.01 Identify roles and responsibilities of members of professional and community service organizations, including career and technical student organizations.

01.02 Work cooperatively as a group member to achieve organizational goals.

01.03 Demonstrate leadership roles and organizational responsibilities.

01.04 Identify and utilize the planning process.

01.05 Develop a personal growth project.

02.0 Demonstrate employability skills as they relate to the design industry. The student will be able to:

02.01 Identify personal talents and abilities that can contribute to positive self-esteem and success in the workplace.

02.02 Practice teamwork skills.

02.03 Practice employability skills.

02.04 Practice positive work ethics and identify negative work ethics.

02.05 Exhibit work expectations of an employer in the design industry.

02.06 Apply math, reading, science, and critical thinking skills as they relate to the design industry.

03.0 Demonstrate effective communication skills. The student will be able to:

03.01	Describe why communication is the basis for all relationships.
03.02	Distinguish between non-assertive, assertive, and aggressive communication.
03.03	Demonstrate communication skills that promote positive relationships in the workplace.
03.04	Practice active listening skills.
03.05	Utilize conflict resolution skills.
04.0	Analyze careers in the design industry. The student will be able to:
04.01	Describe careers in the design industry.
04.02	Classify careers from entry level to professional level.
04.03	Explore entrepreneurship opportunities in the design industry
04.04	Research and present information on a design career to include roles and responsibilities, employment opportunities and requirements for education and training.
05.0	Select and use tools and equipment. The student will be able to:
05.01	Identify and select the appropriate tool for an assignment.
05.02	Demonstrate the proper and safe use of tools and equipment.
05.03	Practice care and maintenance of tools and equipment.
06.0	Identify characteristics and care of textiles. The student will be able to:
06.01	Identify a variety of fabrics through tactile activities.
06.02	Compare and contrast natural and synthetic fabrics.
06.03	Recognize types of fabric construction.
06.04	Identify fabrics appropriate for various purposes.
07.0	Explain the elements and principles of design. The student will be able to:
07.01	Define and illustrate the elements of design.
07.02	Create a color wheel.
07.03	Recognize basic color schemes.

07.04	Research the psychology of color.
07.05	Define and illustrate the principles of design.
08.0	Explain how environmental factors impact design. The student will be able to:
08.01	Define green design.
08.02	Research eco-friendly design products.
08.03	Examine the positive and negative impact that a design product has on the environment.
08.04	Redesign an item into another useful product.
09.0	Demonstrate basic sewing skills. The student will be able to:
09.01	Identify and give the purpose of sewing machine parts.
09.02	Demonstrate math skills as they relate to sewing.
09.03	Demonstrate the threading of a sewing machine.
09.04	Demonstrate straight stitching.
09.05	Identify and demonstrate various stitch length and width selections.
09.06	Interpret written instructions and construct a basic sewing project.
10.0	Analyze clothing choices. The student will be able to:
10.01	Explain the impact of trends and social climates on fashion styles.
10.02	Identify appropriate clothing styles for various events.
10.03	Identify factors that impact clothing costs.
10.04	Demonstrate the procedure for recording accurate body measurements.
10.05	Analyze proper fit.
11.0	Develop a project related to fashion. The student will be able to:
11.01	Select materials and supplies for a fashion project.
11.02	Calculate the costs of a given fashion project.

11.03	Interpret written directions for constructing a fashion project.
11.04	Apply math skills and construct a fashion project.
12.0	Analyze interior design choices. The student will be able to:
12.01	Explain the impact of political and social climates on decorating styles.
12.02	Identify characteristics of furnishing styles.
12.03	Identify factors that impact furnishing choices.
13.0	Develop a project related to interior design. The student will be able to:
13.01	Apply the principals and elements of design in selecting an interior design project.
13.02	Interpret written directions for assembling/constructing an interior design project.
13.03	Apply math skills and construct an interior design project.
14.0	Utilize technology as it relates to the design industry. The student will be able to:
14.01	Identify technology utilized in the design industry.
14.02	Analyze technology trends impacting the design industry.
14.03	Utilize technology.
15.0	Demonstrate the skills involved in effective resource management. The student will be able to:
15.01	Identify steps of the decision-making process.
15.02	Distinguish between a need and a want.
15.03	Explain how values and goals affect decisions.
15.04	Develop a budget and savings plan.
15.05	Analyze the relationship between resources and the attainment of lifestyle goals.
<u>Listed below are the standards that must be met to satisfy the requirements of Section 1003.4156, Florida Statutes:</u>	
The student will be able to:	

16.0	Describe the influences that societal, economic, and technological changes have on employment trends and future training.
17.0	Develop skills to locate, evaluate, and interpret career information.
18.0	Identify and demonstrate processes for making short and long term goals.
19.0	Demonstrate employability skills such as working in a group, problem-solving and organizational skills, and the importance of entrepreneurship.
20.0	Understand the relationship between educational achievement and career choices/post-secondary options.
21.0	Identify a career cluster and related pathways that match career and education goals.
22.0	Develop a career and education plan that includes short- and long-term goals, a secondary-level program of study, and post-secondary/career goals.
23.0	Demonstrate knowledge of technology and its application in career fields/clusters.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career Planning

Effective July 1, 2019, per Section 1003.4156, Florida Statutes (F.S.), for students to meet middle grades promotion requirements, a Career and Education Planning course must be completed in either sixth, seventh, or eighth grade. These courses should be taught integrating the eight career and education planning course standards.

Career and Technical Student Organization (CTSO)

Florida Family Career and Community Leaders of America (FCCLA) is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or post-secondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Course Title: Careers in Fashion Design
Course Type: Orientation/Exploratory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Middle School

Course Number	8209310
CIP Number	04190901MS
Grade Level	6-8
Course Length	Semester
Teacher Certification	Refer to the <u>Course Structure</u> section.
CTSO	FCCLA
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Arts, A/V Technology and Communication career cluster. The content includes, but is not limited to, the development of leadership, communication, and employability skills, resource management, and the exploration of fashion design careers. Students will work with textiles and design elements, learn basic sewing skills, make clothing selections, utilize industry-related technology, and complete projects related to fashion technology and design. Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8209310	Careers in Fashion Design	FAM CON SC 1 FASH TECH 7 G	Semester

Standards

After successfully completing this course, the student will be able to perform the following:

- 01.0 Demonstrate teamwork and leadership skills.
- 02.0 Demonstrate employability skills related to the fashion design industry.
- 03.0 Demonstrate effective communication skills.
- 04.0 Analyze careers in the fashion design industry.
- 05.0 Demonstrate knowledge of the history of fashion.
- 06.0 Select and use tools and equipment.
- 07.0 Identify the characteristics and care of textiles.
- 08.0 Explain the elements and principles of design.
- 09.0 Explain the impact of repairing, altering, redesigning or recycling a garment.
- 10.0 Demonstrate basic sewing skills.
- 11.0 Analyze clothing choices.
- 12.0 Demonstrate the proper procedure for taking accurate body measurements.
- 13.0 Develop a project related to fashion technology and design.
- 14.0 Utilize technology related to the fashion design industry.
- 15.0 Demonstrate the skills involved in effective resource management.

**Florida Department of Education
Student Performance Standards**

Course Title: Careers in Fashion Design
Course Number: 8209310
Course Length: Semester

Course Description:

The purpose of this course is to assist students in making informed decisions regarding academic and occupational goals and to provide information regarding careers in the fashion design industry. The content includes, but is not limited to, the development of leadership, communication, and employability skills, resource management, and the exploration of fashion design careers. Students will work with textiles and design elements, learn basic sewing skills, make clothing selections, utilize industry-related technology, and complete projects related to fashion technology and design.

CTE Standards and Benchmarks

01.0 Demonstrate teamwork and leadership skills. The student will be able to:

01.01 Identify the purposes, functions, roles, and responsibilities of members of professional and youth organizations and career and technical student organizations (CTSO).

01.02 Work cooperatively as a group member to demonstrate leadership and achieve organizational goals.

01.03 Identify leadership roles and organizational responsibilities.

01.04 Identify and utilize the planning process.

01.05 Research and discuss the history of the related CTSO.

02.0 Demonstrate employability skills related to the fashion design industry. The student will be able to:

02.01 Identify personal talents and abilities that contribute to positive self-esteem and workplace success.

02.02 Identify and practice teamwork skills.

02.03 Identify and demonstrate employability skills.

02.04 Identify and demonstrate positive work ethics; determine negative work ethics.

02.05 Exhibit the work-related expectations of an employer in the fashion design industry.

02.06 Apply the math, reading, science, and critical thinking skills related to the fashion design industry.

03.0 Demonstrate effective communications skills. The student will be able to:

CTE Standards and Benchmarks

03.01	Describe the ways communication forms the basis for all relationships.
03.02	Distinguish between aggressive, assertive, and non-assertive forms of communication.
03.03	Demonstrate communications skills that promote positive workplace relationships.
03.04	Practice active listening skills.
03.05	Demonstrate conflict resolution skills.
04.0	Analyze careers in the fashion design industry. The student will be able to:
04.01	Research and describe careers in the fashion design industry.
04.02	Classify career options from entry level to professional level.
04.03	Explore entrepreneurship opportunities in the fashion design industry.
04.04	Research and present information on a fashion design career; include the roles and responsibilities, employment opportunities, and requirements for education and training.
05.0	Demonstrate knowledge of the history of fashion. The student will be able to:
05.01	Explain how historical periods impact fashion.
05.02	Explain the impact of social changes, history, politics, and culture on fashion and fashion design.
05.03	Identify the factors that impact fashion choices.
06.0	Select and use tools and equipment. The student will be able to:
06.01	Identify and select the appropriate tools for an assignment.
06.02	Demonstrate the proper and safe use of tools and equipment.
06.03	Demonstrate care and maintenance of tools and equipment.
07.0	Identify the characteristics and care of textiles. The student will be able to:
07.01	Identify a variety of fabrics through textile activities.
07.02	Compare and contrast natural and synthetic fibers and fabrics.
07.03	Recognize different types of fabric construction.

CTE Standards and Benchmarks

07.04 Identify the appropriate use/purpose of a variety of fabric types.

08.0 Explain the elements and principles of design. The student will be able to:

08.01 Define and illustrate the elements of design.

08.02 Describe a color wheel and its use in fashion design.

08.03 Recognize basic color schemes.

08.04 Research the psychology of color.

08.05 Define and illustrate the principles of design.

09.0 Explain the impact of repairing, altering, redesigning or recycling a garment. The student will be able to:

09.01 Define *green design*, *sustainable design*, and *life cycle cost*.

09.02 Research eco-friendly design products.

09.03 Examine the positive and negative environmental impact of a design product.

09.04 Select a used fashion item to recycle into a new product; create a new product using the recycled item.

10.0 Demonstrate basic sewing skills. The student will be able to:

10.01 Identify the parts of a sewing machine; state the purpose of each part.

10.02 Demonstrate mathematical skills related to sewing.

10.03 Thread a sewing machine.

10.04 Demonstrate straight stitching.

10.05 Identify and demonstrate various stitch lengths and widths.

10.06 Interpret written instructions and construct a basic sewing project.

11.0 Analyze clothing choices. The student will be able to:

11.01 Explain the impact of trends and social climates on fashion styles.

11.02 Identify the appropriate clothing styles for a variety of events.

CTE Standards and Benchmarks

11.03	Identify the factors that impact clothing costs.
12.0	Demonstrate the proper procedure for taking accurate body measurements. The student will be able to:
12.01	Identify different figure types.
12.02	Explain and describe the components of a pattern.
12.03	Identify the symbols found on a pattern piece.
12.04	Demonstrate how to pin and prepare fabric for a fashion project.
12.05	Analyze proper fit.
13.0	Develop a project related to fashion technology and design. The student will be able to:
13.01	Select the materials and supplies for a fashion project.
13.02	Calculate the costs associated with a specified fashion project.
13.03	Interpret written directions to construct a fashion project.
13.04	Apply mathematical skills to construct a fashion project.
14.0	Utilize technology related to the fashion design industry. The student will be able to:
14.01	Identify the technology and software utilized in the fashion design industry.
14.02	Analyze technological trends that impact the fashion design industry.
14.03	Utilize technology related to the fashion design industry.
15.0	Demonstrate the skills involved in effective resource management. The student will be able to:
15.01	Identify the steps of the decision-making process.
15.02	Distinguish between a need and a want.
15.03	Explain how values and goals affect decision-making.
15.04	Develop a budget and savings plan.
15.05	Analyze the relationship between resources and the attainment of lifestyle goals.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

Florida Family Career and Community Leaders of America (FCCLA) is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Course Title: Introduction to Arts, A/V Technology and Communication
Course Type: Orientation/Exploratory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Middle School

Course Number	8209350
CIP Number	148209350M
Grade Level	6-8
Course Length	Semester
Teacher Certification	Refer to the Course Structure section.
CTSO	SkillsUSA
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Arts, A/V Technology and Communication career cluster. The content includes, but is not limited to, technology literacy; understanding the importance of Arts and A/V; understanding the role of science, math, reading, writing, history, and technology in Arts and A/V; and Digital Media. Reinforcement of academic skills occurs through classroom instruction and applied laboratory procedures. Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8209350	Introduction to Arts, A/V Technology and Communication	BUS ED 1 @2 COMM ART @7 7G COMP SCI 6 @2 MKTG 1 PRINTING @7 7G SECRETAR 7 G TC COOP ED @7 TEC ED 1@2 ENG&TEC ED1@2 TV PRO TEC @7 7G VOE @7	Semester

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate an understanding of the Audio and Video Technology and Film career pathway.
- 02.0 Demonstrate an understanding of the Telecommunications career pathway.
- 03.0 Demonstrate an understanding of the Printing Technology career pathway.
- 04.0 Demonstrate an understanding of the Visual Arts career pathway.
- 05.0 Demonstrate an understanding of the Performing Arts career pathway.
- 06.0 Apply leadership and communication skills.
- 07.0 Describe how information technology is used in the Arts, A/V Technology and Communication career cluster.
- 08.0 Use information technology tools.

**Florida Department of Education
Student Performance Standards**

Course Title: Introduction to Arts, A/V Technology and Communication
Course Number: 8209350
Course Length: Semester

Course Description:

Beginning with a broad overview of the Arts, A/V Technology and Communication career cluster, students are introduced to the terminology, careers, history, required skills, and technologies associated with each pathway in the Arts, A/V Technology and Communication career cluster. Additionally, they will be provided with opportunities to acquire and demonstrate beginning leadership skills as well as opportunities for hands-on activities.

CTE Standards and Benchmarks

01.0	Demonstrate an understanding of the Audio and Video Technology and Film career pathway. The student will be able to:
01.01	Define and use proper terminology associated with the Audio and Video Technology and Film career pathway.
01.02	Describe some of the careers available in the Audio and Video Technology and Film career pathway.
01.03	Identify common characteristics of the careers in the Audio and Video Technology and Film career pathway.
01.04	Research the history of the Audio and Video Technology and Film career pathway and describe how the associated careers have evolved and impacted society.
01.05	Identify skills required to successfully enter any career in the Audio and Video Technology and Film career pathway.
01.06	Describe technologies associated in careers within the Audio and Video Technology and Film career pathway.
02.0	Demonstrate an understanding of the Telecommunications career pathway. The student will be able to:
02.01	Define and use proper terminology associated with the Telecommunications career pathway.
02.02	Describe some of the careers available in the Telecommunications career pathway.
02.03	Identify common characteristics of the careers in the Telecommunications career pathway.
02.04	Research the history of the Telecommunications career pathway and describe how the associated careers have evolved and impacted society.
02.05	Identify skills required to successfully enter any career in the Telecommunications career pathway.

CTE Standards and Benchmarks

02.06	Describe technologies associated in careers within the Telecommunications career pathway.
03.0	Demonstrate an understanding of the Printing Technology career pathway. The student will be able to:
03.01	Define and use proper terminology associated with the Printing Technology career pathway.
03.02	Describe some of the careers available in the Printing Technology career pathway.
03.03	Identify common characteristics of the careers in the Printing Technology career pathway.
03.04	Research the history of the Printing Technology career pathway and describe how the associated careers have evolved and impacted society.
03.05	Identify skills required to successfully enter any career in the Printing Technology career pathway.
03.06	Describe technologies associated in careers within the Printing Technology career pathway.
04.0	Demonstrate an understanding of the Visual Arts career pathway. The student will be able to:
04.01	Define and use proper terminology associated with the Visual Arts career pathway.
04.02	Describe some of the careers available in the Visual Arts career pathway.
04.03	Identify common characteristics of the careers in the Visual Arts career pathway.
04.04	Research the history of the Visual Arts career pathway and describe how the associated careers have evolved and impacted society.
04.05	Identify skills required to successfully enter any career in the Visual Arts career pathway.
04.06	Describe technologies associated in careers within the Visual Arts career pathway.
05.0	Demonstrate an understanding of the Performing Arts career pathway. The student will be able to:
05.01	Define and use proper terminology associated with the Performing Arts career pathway.
05.02	Describe some of the careers available in the Performing Arts career pathway.
05.03	Identify common characteristics of the careers in the Performing Arts career pathway.
05.04	Research the history of the Performing Arts career pathway and describe how the associated careers have evolved and impacted society.
05.05	Identify skills required to successfully enter any career in the Performing Arts career pathway.

CTE Standards and Benchmarks

05.06	Describe technologies associated in careers within the Performing Arts career pathway.
06.0	Apply leadership and communication skills. The student will be able to:
06.01	Discuss the establishment and history of the SkillsUSA organization.
06.02	Identify the characteristics and responsibilities of organizational leaders.
06.03	Demonstrate parliamentary procedure skills during a meeting.
06.04	Participate on a committee which has an assigned task and report to the class.
06.05	Demonstrate effective communication skills through delivery of a speech, a slide presentation, or conducting a demonstration.
06.06	Use a computer to assist in the completion of project related to Arts, A/V Technology and Communication career cluster.
07.0	Describe how information technology is used in the Arts, A/V Technology and Communication career cluster. The student will be able to:
07.01	Identify information technology (IT) careers in the Arts, A/V Technology and Communication career cluster, including the responsibilities, tasks and skills they require.
07.02	Relate information technology project management concepts and terms to careers in the Arts, A/V Technology and Communication career cluster.
07.03	Manage information technology components typically used in professions of the Arts, A/V Technology and Communication career cluster.
07.04	Identify security-related ethical and legal IT issues faced by professionals in the Arts, A/V Technology and Communication career cluster.
08.0	Use information technology tools. The student will be able to:
08.01	Identify the functions of web browsers, and use them to access the World Wide Web and other computer resources typically used in the Arts, A/V Technology and Communication career cluster.
08.02	Use e-mail clients to send simple messages and files to other Internet users.
08.03	Demonstrate ways to communicate effectively using Internet technology.
08.04	Use different types of web search engines effectively to locate information relevant to the Arts, A/V Technology and Communication career cluster.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Course Title: Introduction to Arts, A/V Technology and Communication and Career Planning
Course Type: Orientation/Exploratory and Career Planning
Career Cluster: Arts, A/V Technology and Communication

Secondary – Middle School

Course Number	8209360
CIP Number	148209360M
Grade Level	6-8
Course Length	Semester
Teacher Certification	Refer to the Course Structure section.
CTSO	SkillsUSA
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Arts, A/V Technology and Communication career cluster. The content includes, but is not limited to, technology literacy; the importance of Arts and A/V technology; the role of science, math, reading, writing, history, and technology in the Arts and A/V; and digital media. Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8209360	Introduction to Arts, A/V Technology and Communication and Career Planning	BUS ED 1 @2 COMM ART @7 7G COMP SCI 6 @2 MKTG 1 PRINTING @7 7G SECRETAR 7 G TC COOP ED @7 TEC ED 1@2 TV PRO TEC @7 7G VOE @7	Semester

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate an understanding of the Audio and Video Technology and Film career pathway.
- 02.0 Demonstrate an understanding of the Telecommunications career pathway.
- 03.0 Demonstrate an understanding of the Printing Technology career pathway.
- 04.0 Demonstrate an understanding of the Visual Arts career pathway.
- 05.0 Demonstrate an understanding of the Performing Arts career pathway.
- 06.0 Apply leadership and communication skills.
- 07.0 Describe how information technology is used in the Arts, A/V Technology and Communication career cluster.
- 08.0 Use information technology tools.

Listed below are the standards that must be met to satisfy the requirements of Section 1003.4156, Florida Statutes:

- 09.0 Describe the influences that societal, economic, and technological changes have on employment trends and future training.
- 10.0 Develop skills to locate, evaluate, and interpret career information.
- 11.0 Identify and demonstrate processes for making short- and long-term goals.
- 12.0 Demonstrate employability skills such as working in a group, problem-solving and organizational skills, and the importance of entrepreneurship.
- 13.0 Understand the relationship between educational achievement and career choices/postsecondary options.
- 14.0 Identify a career cluster and related pathways through an interest assessment that matches career and education goals.
- 15.0 Develop a career and education plan that includes short- and long-term goals, a high school program of study, and postsecondary/career goals.
- 16.0 Demonstrate knowledge of technology and its application in career fields/clusters.

**Florida Department of Education
Student Performance Standards**

Course Title: Introduction to Arts, A/V Technology and Communication and Career Planning
Course Number: 8209360
Course Length: Semester

Course Description:

Beginning with a broad overview of the Arts, A/V Technology and Communication career cluster, students are introduced to the terminology, careers, history, required skills, and technologies associated with each pathway in the Arts, A/V Technology and Communication career cluster. Additionally, they will be provided with opportunities to acquire and demonstrate beginning leadership skills as well as opportunities for hands-on activities.

CTE Standards and Benchmarks	
01.0	Demonstrate an understanding of the Audio and Video Technology and Film career pathway. The student will be able to:
01.01	Define and use proper terminology associated with the Audio and Video Technology and Film career pathway.
01.02	Describe some of the careers available in the Audio and Video Technology and Film career pathway.
01.03	Identify common characteristics of the careers in the Audio and Video Technology and Film career pathway.
01.04	Research the history of the Audio and Video Technology and Film career pathway and describe how the associated careers have evolved and impacted society.
01.05	Identify skills required to successfully enter any career in the Audio and Video Technology and Film career pathway.
01.06	Describe technologies associated in careers within the Audio and Video Technology and Film career pathway.
02.0	Demonstrate an understanding of the Telecommunications career pathway. The student will be able to:
02.01	Define and use proper terminology associated with the Telecommunications career pathway.
02.02	Describe some of the careers available in the Telecommunications career pathway.
02.03	Identify common characteristics of the careers in the Telecommunications career pathway.
02.04	Research the history of the Telecommunications career pathway and describe how the associated careers have evolved and impacted society.
02.05	Identify skills required to successfully enter any career in the Telecommunications career pathway.

02.06	Describe technologies associated in careers within the Telecommunications career pathway.
03.0	Demonstrate an understanding of the Printing Technology career pathway. The student will be able to:
03.01	Define and use proper terminology associated with the Printing Technology career pathway.
03.02	Describe some of the careers available in the Printing Technology career pathway.
03.03	Identify common characteristics of the careers in the Printing Technology career pathway.
03.04	Research the history of the Printing Technology career pathway and describe how the associated careers have evolved and impacted society.
03.05	Identify skills required to successfully enter any career in the Printing Technology career pathway.
03.06	Describe technologies associated in careers within the Printing Technology career pathway.
04.0	Demonstrate an understanding of the Visual Arts career pathway. The student will be able to:
04.01	Define and use proper terminology associated with the Visual Arts career pathway.
04.02	Describe some of the careers available in the Visual Arts career pathway.
04.03	Identify common characteristics of the careers in the Visual Arts career pathway.
04.04	Research the history of the Visual Arts career pathway and describe how the associated careers have evolved and impacted society.
04.05	Identify skills required to successfully enter any career in the Visual Arts career pathway.
04.06	Describe technologies associated in careers within the Visual Arts career pathway.
05.0	Demonstrate an understanding of the Performing Arts career pathway. The student will be able to:
05.01	Define and use proper terminology associated with the Performing Arts career pathway.
05.02	Describe some of the careers available in the Performing Arts career pathway.
05.03	Identify common characteristics of the careers in the Performing Arts career pathway.
05.04	Research the history of the Performing Arts career pathway and describe how the associated careers have evolved and impacted society.
05.05	Identify skills required to successfully enter any career in the Performing Arts career pathway.
05.06	Describe technologies associated in careers within the Performing Arts career pathway.

06.0	Apply leadership and communication skills. The student will be able to:
06.01	Discuss the establishment and history of the SkillsUSA organization.
06.02	Identify the characteristics and responsibilities of organizational leaders.
06.03	Demonstrate parliamentary procedure skills during a meeting.
06.04	Participate on a committee which has an assigned task and report to the class.
06.05	Demonstrate effective communication skills through delivery of a speech, a slide presentation, or by conducting a demonstration.
06.06	Use a computer to assist in the completion of a project related to Arts, A/V Technology and Communication career cluster.
07.0	Describe how information technology is used in the Arts, A/V Technology and Communication career cluster. The student will be able to:
07.01	Identify information technology (IT) careers in the Arts, A/V Technology and Communication career cluster, including the responsibilities, tasks and skills they require.
07.02	Relate information technology project management concepts and terms to careers in the Arts, A/V Technology and Communication career cluster.
07.03	Manage information technology components typically used in professions of the Arts, A/V Technology and Communication career cluster.
07.04	Identify security-related ethical and legal IT issues faced by professionals in the Arts, A/V Technology and Communication career cluster.
08.0	Use information technology tools. The student will be able to:
08.01	Identify the functions of web browsers, and use them to access the World Wide Web and other computer resources typically used in the Arts, A/V Technology and Communication career cluster.
08.02	Use e-mail clients to send simple messages and files to other Internet users.
08.03	Demonstrate ways to communicate effectively using Internet technology.
08.04	Use different types of web search engines effectively to locate information relevant to the Arts, A/V Technology and Communication career cluster.
<u>Listed below are the standards that must be met to satisfy the requirements of Section 1003.4156, Florida Statutes:</u>	
The students will be able to:	
09.0	Describe the influences that societal, economic, and technological changes have on employment trends and future training.
10.0	Develop skills to locate, evaluate, and interpret career information.

11.0	Identify and demonstrate processes for making short and long term goals.
12.0	Demonstrate employability skills such as working in a group, problem-solving and organizational skills, and the importance of entrepreneurship.
13.0	Understand the relationship between educational achievement and career choices/post-secondary options.
14.0	Identify a career cluster and related pathways through an interest assessment that match career and education goals.
15.0	Develop a career and education plan that includes short and long-term goals, high school program of study, and post-secondary/career goals.
16.0	Demonstrate knowledge of technology and its application in career fields/clusters

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career Planning

Effective July 1, 2019, per Section 1003.4156, Florida Statutes (F.S.), for students to meet middle grades promotion requirements, a Career and Education Planning course must be completed in either sixth, seventh, or eighth grade. These courses should be taught integrating the eight career and education planning course standards.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Design
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8209600
CIP Number	0510030300
Grade Level	9-12
Program Length	6 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	SkillsUSA, FBLA
SOC Codes (all applicable)	27-1024 – Graphic Designers 43-9031 – Desktop Publishers 15-1151 – Computer User Support Specialists
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment in the Digital Design industry as Information Technology Assistants, Production Assistants, Digital Assistant Designers, Graphic Designers, and Multimedia Designers.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and the relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, enhanced practical experiences in computer-generated art and text, graphic design, graphic production, digital design skills, preparation of digital layouts and illustrations, scanning, and the development of specialized multimedia presentations.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of six (6) credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8207310	Digital Information Technology	DIT Teacher Certifications	1 credit	15-1151	2	CT
8209510	Digital Design 1	BUS ED 1 @2 CLERICAL @7 7G COMM ART @7 7G COMP SCI 6@2 MANAG SUPV 7G SECRETAR 7 G TC COOP ED @7 ELECT DP @7 %G TEC ED 1 @2 ENG&TEC ED1@2	1 credit	43-9031	3	CT
8209520	Digital Design 2	MANAG SUPV 7G	1 credit	43-9031	3	CT
8209530	Digital Design 3	BUS DP @7 %G BUS ED 1 @2	1 credit	43-9031	3	CT
8209540	Digital Design 4	CLERICAL @7 7G	1 credit	27-1024	3	CT
8209550	Digital Design 5	COMM ART @7 7G COMP SCI 6 @2 ELECT DP @7 %G PRINTING @7 7G SECRETAR 7 G TC COOP ED @7 TEC ED 1 @2 ENG&TEC ED1@2 TEC ELEC \$7 GVOE @7	1 credit	27-1024	3	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

Digital Information Technology (8207310) is the first course in this program. Standards 01.0 – 15.0 are associated with this course.

- 01.0 Demonstrate knowledge, skill, and application of information technology to accomplish job objectives and enhance workplace performance.
- 02.0 Develop an awareness of microcomputers.
- 03.0 Demonstrate an understanding of networks.
- 04.0 Use word processing applications to enhance the effectiveness of various types of documents and communication.
- 05.0 Use presentation applications to enhance communication skills.
- 06.0 Use spreadsheet applications to enhance communication skills.
- 07.0 Use database applications to store and organize data.
- 08.0 Use electronic mail to enhance communication skills.
- 09.0 Investigate individual assessment and job/career exploration and individual career planning that reflect the transition from school to work, lifelong learning, and personal and professional goals.
- 10.0 Incorporate appropriate leadership and supervision techniques, customer service strategies, and standards of personal ethics to accomplish job objectives and enhance workplace performance.
- 11.0 Demonstrate competence using computer networks, internet and online databases to facilitate collaborative or individual learning and communication.
- 12.0 Develop awareness of computer languages, web-based and software applications, and emerging technologies.
- 13.0 Demonstrate an understanding of basic html by creating a simple web page.
- 14.0 Demonstrate comprehension and communication skills.
- 15.0 Use social media to enhance online communication and develop an awareness of a digital footprint.

Digital Design 1

- 16.0 Demonstrate knowledge of digital publishing concepts.
- 17.0 Demonstrate knowledge of basic digital imaging.
- 18.0 Demonstrate proficiency in the safe and ethical use of the Internet to locate information.
- 19.0 Identify project requirements, define project planning, and understand the design process.
- 20.0 Perform page layout and measurement activities.
- 21.0 Demonstrate an understanding of color and its role in digital design.
- 22.0 Demonstrate a basic understanding of typography.
- 23.0 Demonstrate an understanding of elements and principles of design.
- 24.0 Demonstrate basic skill in digital photography.
- 25.0 Demonstrate skills in the use of raster software applications.
- 26.0 Demonstrate basic skills in the use of vector software applications.
- 27.0 Demonstrate basic technical skills using a desktop publishing application.
- 28.0 Develop an awareness of the emergent technologies associated with digital design.
- 29.0 Demonstrate understanding in page layout using desktop publishing applications.
- 30.0 Demonstrate an understanding of career opportunities and requirements in the field of digital design.

Digital Design 2

- 31.0 Perform critical thinking activities.
- 32.0 Demonstrate the ability to set project requirements, engage in project planning, and utilize the design process.
- 33.0 Demonstrate an intermediate understanding of typography.
- 34.0 Demonstrate skills in the use of vector software applications.
- 35.0 Demonstrate an intermediate understanding in digital publishing operations.
- 36.0 Demonstrate skills in promotional design and application.
- 37.0 Demonstrate proficiency in digital imaging.
- 38.0 Demonstrate the ability to apply the design process.
- 39.0 Demonstrate understanding in the creation of digital design solutions involving motion or special effects.
- 40.0 Demonstrate an understanding of the use of emergent technologies in digital design industries.

Digital Design 3

- 41.0 Identify relevant career/college opportunities and produce required documents.
- 42.0 Demonstrate the ability to independently set, design and evaluate project requirements, project planning, model project planning and utilize the design process.
- 43.0 Demonstrate understanding in creating a simple webpage.
- 44.0 Demonstrate an advanced understanding in digital publishing operations.
- 45.0 Demonstrate the ability to create a multimedia presentation.
- 46.0 Demonstrate advanced knowledge and skills relative to the design process.
- 47.0 Demonstrate proficiency in digital photography.
- 48.0 Plan, organize, and carry out collaborative digital design projects.
- 49.0 Demonstrate proficiency in the creation of a digital design product using mobile communication devices.
- 50.0 Create a portfolio (print and/or digital).

Digital Design 4

- 51.0 Demonstrate mastery in digital publishing operations.
- 52.0 Demonstrate proficiency in website design.
- 53.0 Compare and contrast various digital media delivery systems.
- 54.0 Demonstrate advanced project design capabilities associated with digital publishing.
- 55.0 Refine a portfolio (print and/or digital).

Digital Design 5

- 56.0 Demonstrate proficiency in the creation of digital design solutions involving motion or special effects.
- 57.0 Demonstrate advanced ability to create and manipulate digital images using software applications.
- 58.0 Maintain a portfolio (print and/or digital).

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Information Technology
Course Number: 8207310
Course Credit: 1

Course Description:

This core course is designed to provide a basic overview of current business and information systems and trends, and to introduce students to fundamental skills required for today's business and academic environments. Emphasis is placed on developing fundamental computer skills. The intention of this course is to prepare students to be successful both personally and professionally in an information-based society. Digital Information Technology includes the exploration and use of: databases, the internet, social media, spreadsheets, presentation applications, management of personal information and email, word processing and document manipulation, HTML, web page design, and the integration of these programs using software that meets industry standards.

Digital Information Technology (8207310) is part of several programs across the various CTE career clusters. To ensure consistency, the standards and benchmarks for this course (01.0 – 15.0) have been placed in a separate document. To access this document, visit:

[Digital Information Technology \(8207310\)](#)

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Design 1
Course Number: 8209510
Course Credit: 1

Course Description:

This course is designed to develop the entry-level skills required for careers in digital design. The content includes computer skills; digital publishing concepts and operations; layout, design, and measurement activities; digital imaging; communication, collaboration and decision-making activities; critical thinking and problem-solving.

CTE Standards and Benchmarks	
16.0	Demonstrate knowledge of digital publishing concepts. The student will be able to:
16.01	Define the terms commonly used in digital publishing.
16.02	Identify the characteristics of paper (e.g., weight and point).
16.03	Apply different types of color (e.g., RGB, CMYK, Pantone Color Matching System, and HEX).
16.04	Identify software used in digital publishing.
16.05	Differentiate between raster (bitmap) and vector graphic images.
16.06	Compare and contrast image formats (e.g., BMP, EPS, GIF, JPEG, PDF, PNG, RAW, and TIF).
17.0	Demonstrate knowledge of basic digital imaging. The student will be able to:
17.01	Demonstrate proper use of scanners, digital cameras, and various input devices.
17.02	Identify the attributes of line art, grayscale, duotone, spot color and the four-color process.
18.0	Demonstrate proficiency in the safe and ethical use of the Internet to locate information. The student will be able to:
18.01	Understand the principles of copyright.
18.02	Identify and apply Copyright Fair Use guidelines.
18.03	Demonstrate an understanding of safe and ethical Internet usage.

19.0	Identify project requirements, define project planning, and understand the design process. The student will be able to:
19.01	Identify the purpose, audience, and the needs of the audience for the preparation of design projects.
19.02	Research and describe the implications of audience, purpose/message, and time constraints relative to a design project.
19.03	Determine project specifications.
19.04	Define design criteria and design constraints.
19.05	Produce basic thumbnail sketches and rough designs.
19.06	Identify project management tasks and responsibilities.
20.0	Perform page layout and measurement activities. The student will be able to:
20.01	Determine the appropriate type of basic layout for a specified problem (e.g., audience and purpose).
20.02	Identify distinct components in a layout (e.g., headlines, subheads, and body copy).
20.03	Demonstrate basic use of typography (e.g., visual hierarchy, proximity, alignment, contrast, and repetition).
20.04	Compare and contrast units of measurement (e.g., inches, centimeters, millimeters, points, picas, and pixels).
20.05	Produce a variety of design layouts (e.g., flyers, postcards, brochures, business cards, and letterhead).
20.06	Incorporate clip art, images, borders, and other special effects into a layout.
20.07	Select the appropriate color format and resolution for a variety of purposes (e.g., web, print).
21.0	Demonstrate an understanding of color and its role in digital design. The student will be able to:
21.01	Understand the color wheel and its uses.
21.02	Describe the spectral colors in the visible light spectrum.
21.03	Define and explain the terminology related to color (e.g., Chroma, lightness, saturation, hue, intensity, luminance/value, shade, and tint).
21.04	Describe the difference between additive and subtractive color mixing.
21.05	Compare and contrast RGB and CYMK color models as used in digital design.
21.06	Demonstrate the application of color theory to design practices.
22.0	Demonstrate a basic understanding of typography. The student will be able to:

22.01	Define and describe the terminology related to character and line spacing (e.g., leading, kerning, tracking, baseline shift, and ligature).
22.02	Identify the characteristics and psychology of type, type families, type series, and type styles.
22.03	Understand the installation and application of fonts.
23.0	Demonstrate an understanding of elements and principles of design. The student will be able to:
23.01	Identify the elements of design (line, shape, mass, color, texture, etc.).
23.02	Identify the principles of design (variety, movement, emphasis, balance, space, etc.).
24.0	Demonstrate basic skill in digital photography. The student will be able to:
24.01	Demonstrate knowledge of ethics related to digital images/imaging; examine legal and content-related issues.
24.02	Demonstrate the operation of a digital camera (typical features/modes).
24.03	Apply effective design principles in digital photography compositions (e.g., rule of thirds).
24.04	Develop an understanding of metadata and the digital photography workflow.
25.0	Demonstrate skills in the use of raster software applications. The student will be able to:
25.01	Demonstrate basic knowledge of the tools and techniques for using a raster-based software application.
25.02	Demonstrate skill in importing, transforming and cropping images.
25.03	Create and edit images/photographs using digital imaging software (e.g., layers, image editing, adjustments, filters, and selections).
25.04	Demonstrate skill in raster image manipulation, color correction, and special effects.
25.05	Demonstrate an understanding of image resolution and compression factors such as transmission speed, color reduction, and delivery media parameters.
26.0	Demonstrate basic skills in the use of vector software applications. The student will be able to:
26.01	Demonstrate basic knowledge of the tools and techniques for using vector software applications.
26.02	Create and edit various illustrations using vector software (e.g., line art, drawing basics, transforming/applying effects to objects, painting, type and type effects, and layers).
27.0	Demonstrate basic technical skills using a desktop publishing application. The student will be able to:
27.01	Determine the activities and implications of content preparation and proofreading.

27.02	Incorporate scanned and digital photographs into documents comprising a specified design (e.g., poster, brochure, card, and advertisement).
27.03	Proofread manually and digitally.
28.0	Develop an awareness of the emerging technologies associated with digital design. The student will be able to:
28.01	Compare and contrast emerging technologies relative to their role in digital design (e.g., wireless, cloud-based, mobile, portable devices, and kiosks).
28.02	Describe social media as a form of digital design.
28.03	Describe the emergent and evolving nature of software applications used in interactive design.
28.04	Explain how the use of advanced image sensing devices have altered the manner in which communication takes place, especially those utilizing Quick Response (QR) Codes and other forms of two-dimensional bar coding techniques.
29.0	Demonstrate understanding in page layout using desktop publishing applications. The student will be able to:
29.01	Design a document using grids and formats.
29.02	Produce documents integrating the Elements and Principles of Art and Design.
30.0	Demonstrate an understanding of career opportunities and requirements in the field of digital design. The student will be able to:
30.01	Discuss individual interests related to a career in digital design.
30.02	Identify the skills required of a digital designer.
30.03	Explore career opportunities in the field of digital design.
30.04	Explore secondary and post-secondary educational opportunities related to digital design.
30.05	Identify job search platforms.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Design 2
Course Number: 8209520
Course Credit: 1

Course Description:

This course continues the development of entry-level skills required for careers in digital design. The content includes computer skills; digital publishing operations; layout, design, and measurement activities; digital imaging; communication, collaboration and decision-making activities; critical thinking and problem solving.

CTE Standards and Benchmarks

31.0	Perform critical thinking activities. The student will be able to:
31.01	Research a digital design problem and determine the most appropriate problem-solving method to enhance the functional, economic, and ethical viability of a project.
31.02	Use critical thinking skills to evaluate information and select relevant material.
32.0	Demonstrate the ability to set project requirements, engage in project planning, and utilize the design process. The student will be able to:
32.01	Produce final designs based on specifications.
32.02	Make decisions based on specifications.
32.03	Explain the relationship between design criteria and design constraints.
33.0	Demonstrate an intermediate understanding of typography. The student will be able to:
33.01	Demonstrate an understanding of the history of typography.
33.02	Describe the principles of typographic design as they relate to digital design.
33.03	Compare and contrast the techniques of typographic communication relative to appropriateness and effectiveness.
33.04	Demonstrate proficiency in incorporating typographic techniques into a communication design.
34.0	Demonstrate skills in the use of vector software applications. The student will be able to:
34.01	Demonstrate skill in vector image manipulation, color correction, and special effects.

34.02	Demonstrate ability to convert vector files to raster files.
35.0	Demonstrate an intermediate understanding in digital publishing operations. The student will be able to:
35.01	Produce a variety of color designs using different color techniques; include process color and spot color.
35.02	Prepare output files using prepress operations (e.g., color separation, font management, and file management).
35.03	Read work orders and prepare electronic files that meet all specifications.
35.04	Understand how to prepare interactive components (hyperlinks, buttons, etc.).
36.0	Demonstrate skills in promotional design and application. The student will be able to:
36.01	Identify the types of promotional designs used in various industries.
36.02	Write a promotional message that appeals to a specified target market.
36.03	Use design principles to prepare promotional messages (e.g., slogans and taglines).
36.04	Produce designs for the appropriate advertising medium.
36.05	Use advertising guidelines to design appropriate sample ads (print, television, and the Internet, etc.)
37.0	Demonstrate proficiency in digital imaging. The student will be able to:
37.01	Demonstrate understanding of and proficiency in the use of formats and modes.
37.02	Demonstrate proficiency with image editing software.
37.03	Complete projects using appropriate resolution and screen values (e.g., DPI, LPI, and PPI).
37.04	Retouch digital photographs utilize tones, hues, values, etc.
37.05	Demonstrate proficiency in digital image manipulation (e.g., compositing, destructive vs. non-destructive editing, masks, and color-correction).
38.0	Demonstrate the ability to apply the design process. The student will be able to:
38.01	Determine whether a digital design problem should be addressed or resolved.
38.02	Conduct a brainstorming exercise (e.g., concept mapping and graphic organizers).
38.03	Develop a digital design solution using the design process.

38.04	Evaluate an existing design using conceptual, physical, or mathematical models; note aspects for improvement; determine whether the design meets criteria and constraints.
38.05	Identify the criteria and constraints associated with a digital design problem and select the most appropriate solution based on these factors.
38.06	Evaluate the quality, efficiency, and productivity of an existing or proposed design; refine the design accordingly.
39.0	Demonstrate understanding in the creation of digital design solutions involving motion or special effects. The student will be able to:
39.01	Demonstrate an understanding of kinetic typography.
39.02	Design a communication solution that employs animation or motion (e.g., graphics, text, and video) to achieve or enhance the intended message.
39.03	Describe the design constraints associated with devices (e.g., tablet, kiosk, and smartphone) used to deliver digital design products.
40.0	Demonstrate an understanding of the use of emerging technologies in digital design industries. The student will be able to:
40.01	Discuss trends in digital and printed mediums.
40.02	Explain the various technologies associated with digital design, advertising, and associated industries.
40.03	Compare and contrast printing processes.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Design 3
Course Number: 8209530
Course Credit: 1

Course Description:

This course continues the development of industry-standard skills required for careers in digital design. The content includes the use of software and equipment to perform digital publishing and digital imaging activities. Students continue to learn about communication, collaboration and decision-making activities, critical thinking and problem solving.

CTE Standards and Benchmarks	
41.0	Identify relevant career/college opportunities and produce required documents. The student will be able to:
41.01	Reinforce competence in job interview skills and techniques.
41.02	Create a professional résumé and letter of introduction.
41.03	Procure letters of recommendation; list awards, certifications and recognition received.
42.0	Demonstrate the ability to independently set, design and evaluate project requirements, project planning, model project planning and utilize the design process. The student will be able to:
42.01	Demonstrate knowledge of project management tasks and responsibilities.
42.02	Evaluate solutions to ensure the sustainability and effectiveness of a digital design product (e.g., visual appeal, audience, media, and market research).
42.03	Practice basic usability, readability, and accessibility standards.
42.04	Recommend final design based on the relationship between design criteria and design constraints.
42.05	Utilize a variety of approaches to solve digital design problems.
43.0	Demonstrate understanding in creating a simple webpage. The student will be able to:
43.01	Convert publications for viewing on the Internet.
43.02	Optimize images and files for the web.
43.03	Create a simple webpage and use hyperlinks.

43.04	Develop awareness of acceptable website design.
43.05	Demonstrate an understanding of WYSIWYG editors.
44.0	Demonstrate an advanced understanding in digital publishing operations. The student will be able to:
44.01	Produce multiple projects using a variety of software programs.
44.02	Demonstrate the ability to prepare output files.
44.03	Demonstrate proficiency in the use of a raster-based illustration program.
44.04	Demonstrate proficiency in the use of a vector-based illustration program.
45.0	Demonstrate the ability to create a multimedia presentation. The student will be able to:
45.01	Create and incorporate multimedia files; add audio, links, images/photos, and video.
45.02	Demonstrate the ability to create a multimedia PDF.
45.03	Demonstrate proficiency in the use of 2D and 3D animation effects.
45.04	Create links in webpages, PDF files, and other documents.
45.05	Optimize images for Internet publication.
45.06	Incorporate multimedia elements into digitally delivered documents/products.
45.07	Generate presentation following accessibility guidelines.
45.08	Generate presentations with embedded content.
46.0	Demonstrate advanced knowledge and skills relative to the design process. The student will be able to:
46.01	Demonstrate the ability to represent a concept.
46.02	Determine the most effective software applications for the digital design problem.
46.03	Use communication, analysis, and design skills to define project specifications that meet the client's needs/desires; include purpose, mood, and audience.
46.04	Demonstrate increased proficiency in the use of tools and techniques in desktop/digital publishing software applications (e.g., layout, text, graphics, color and transparency, and output).
46.05	Define, design, and complete digital design projects; account for time and resources.

46.06	Create a project plan to account for the time and resources to complete the project.
46.07	Facilitate project completion based on a documented plan related to the design process.
47.0	Demonstrate proficiency in digital photography. The student will be able to:
47.01	Demonstrate proficiency in adjusting the hardware features (e.g., manual settings, shutter speed, and f-stops) of a basic digital single-lens reflex camera (DSLR or digital SLR).
47.02	Demonstrate knowledge of editing processes on smartphone devices; recognize the availability of apps related to photograph editing.
47.03	Demonstrate understanding of white balance and ISO.
47.04	Understand the role of lighting in photographic composition; develop an awareness of and use the three-point lighting concept.
47.05	Use imaging techniques (e.g., High Dynamic Range, panoramic, long exposure, stop motion, and time lapse) to achieve different artistic effects.
47.06	Demonstrate the use of various photography techniques (e.g., black and white photography, macro photography).
47.07	Demonstrate knowledge of photography by creating a variety of photos that include appropriate composition, framing, and point-of-view (POV).
48.0	Plan, organize, and carry out collaborative digital design projects. The student will be able to:
48.01	Apply the design process to determine the scope of a project.
48.02	Identify the resources required for the project.
48.03	Organize a team and assign specific tasks according to individual strengths.
48.04	Develop a project plan (conduct research, design, development, and evaluation activities) for the project.
48.05	Determine project priorities and the timeline for completion.
48.06	Carry out the project plan to successful completion.
48.07	Create a presentation to articulate the problem, the solution, the selected process, conclusions, and lessons learned (self-reflection).
49.0	Demonstrate proficiency in the creation of a digital design product using mobile communication devices. The student will be able to:
49.01	Design and create digital design products suitable for delivery via multiple media options (e.g., smartphones, tablets, and laptops).
49.02	Examine the design implications of products intended for delivery via mobile devices.
49.03	Compare and contrast the security and privacy issues associated with different delivery media, particularly in regard to social media.

49.04	Reinforce the implications of copyright and compare various licensing practices.
50.0	Create a portfolio (print and/or digital). The student will be able to:
50.01	Assess personal interests and create an individual career plan that reflects the transition from school to work, lifelong learning, and personal and professional goals.
50.02	Prepare a traditional (hard copy) portfolio.
50.03	Prepare a digital portfolio.
50.04	Identify opportunities to present the portfolio to an audience.
50.05	Refine and implement a plan to facilitate personal growth and skill development related to career opportunities in digital design.
50.06	Incorporate a résumé and letter of interest in portfolio

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Design 4
Course Number: 8209540
Course Credit: 1

Course Description:

This course is designed to develop advanced industry-standard skills required for careers in digital design. The content includes the use of software and equipment, including digital video cameras and video/audio editing software.

CTE Standards and Benchmarks

51.0	Demonstrate mastery in digital publishing operations. The student will be able to:
51.01	Establish workflows using advanced features in desktop publishing software.
51.02	Create documents using advanced features in desktop publishing software.
52.0	Demonstrate proficiency in website design. The student will be able to:
52.01	Compare and contrast various specialized web design programs.
52.02	Demonstrate proficiency using a WYSIWYG editor.
52.03	Understand how to prepare interactive components (hyperlinks, buttons, etc.).
53.0	Compare and contrast various digital media delivery systems. The student will be able to:
53.01	Explain the benefits and constraints of fixed versus streaming digital media.
53.02	Describe the variations in design considerations between the mass display and on-demand display of digital media.
53.03	Discuss the variations in design considerations related to digital signage.
53.04	Describe the design implications of digital images and/or graphics based on projected, mobile and Wi-Fi delivery media.
54.0	Demonstrate advanced project design capabilities associated with digital publishing. The student will be able to:
54.01	Demonstrate advanced capabilities in the use of tools and techniques in digital publishing software applications (e.g., layout of a document, text, graphics, color/transparency, and output).
55.0	Refine a portfolio (print and/or digital). The student will be able to:

CTE Standards and Benchmarks

55.01 Refine a portfolio.

55.02 Present an updated portfolio to an audience.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Design 5
Course Number: 8209550
Course Credit: 1

Course Description:

This course continues the development of advanced industry-standard skills required for careers in digital design. The content includes the use of software and equipment to create multimedia presentations.

CTE Standards and Benchmarks

56.0 Demonstrate proficiency in the creation of digital design solutions involving motion or special effects. The student will be able to:

56.01 Demonstrate proficiency in the use of editing software to create a product featuring special visual effects.

56.02 Design and create an interactive digital design product featuring the use of rich media.

57.0 Demonstrate advanced ability to create and manipulate digital images using software applications. The student will be able to:

56.03 Demonstrate advanced capabilities in the use of tools and techniques in raster-based software applications.

56.04 Demonstrate advanced capabilities in the use of tools and techniques in vector-based software applications.

58.0 Maintain a portfolio (print and/or digital). The student will be able to:

56.05 Continue to update the portfolio.

56.06 Refine and present digital portfolio to an audience.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

SkillsUSA and Florida Family, Career and Community Leaders of America (FCCLA) are the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Program Title: Graphic Communications and Printing Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8230100
CIP Number	0650040216
Grade Level	9-12
Program Length	6 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	SkillsUSA
SOC Codes (all applicable)	51-5112 – Printing Press Operators 51-5111 – Prepress Technicians and Workers 27-1024 – Graphic Designers
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment in the Printing and Graphic Communications industry.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The course content includes, but is not limited to, an understanding of the printing and graphic communications industry, digital production printing and prepress operations, contemporary and emergent printing technologies, and the application of finishing and distribution processes.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of six (6) credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8230110	Introduction to Printing Technology	PRINTING @7 7G	1 credit	51-5112	2	CT
8230120	Basic Offset Press Operations		1 credit	51-5112	2	CT
8230130	Basic Finishing and Bindery Operations		1 credit	51-5112	2	CT
8230140	Digital Production Printing Operations		1 credit	51-5111	3	CT
8230150	Digital Imaging and Typography		1 credit	27-1024	3	CT
8230160	Page Layout and Scanning Operations		1 credit	27-1024	3	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate understanding of safety and first aid practices.
- 02.0 Demonstrate understanding of graphic communications occupations and processes.
- 03.0 Demonstrate proficiency in art and copy preparation.
- 04.0 Demonstrate proficiency in prepress/imaging operations.
- 05.0 Demonstrate proficiency in image assembly/platemaking.
- 06.0 Demonstrate proficiency in performing basic offset press operations.
- 07.0 Demonstrate proficiency in basic finishing and bindery operations.
- 08.0 Demonstrate appropriate math skills.
- 09.0 Demonstrate proficiency in performing basic imposition platemaking and digital printer competencies.
- 10.0 Demonstrate proficiency in the operation of a digital production printing system.
- 11.0 Demonstrate proficiency in basic electronic imaging competencies.
- 12.0 Demonstrate proficiency in the use of type and typography.

**Florida Department of Education
Student Performance Standards**

Course Title: Introduction to Printing Technology
Course Number: 8230110
Course Credit: 1

Course Description:

This course is designed to provide instruction in the different procedures and skills to perform, first aid, art and copy and pre-press operations.

CTE Standards and Benchmarks

01.0 Demonstrate understanding of safety and first aid practices. The student will be able to:

01.01 Identify the location of fire safety equipment.

01.02 Describe the proper use of fire safety equipment.

01.03 List safety rules involving flammable liquids.

01.04 List the steps to be taken in case of injury in the lab.

01.05 Identify locations of first aid kits and eye wash stations.

01.06 Discuss the importance of the Material Safety Data Sheets (MSDS).

01.07 Identify protective safety equipment (e.g., gloves, goggles, ear plugs).

01.08 Practice proper safety procedures when operating equipment.

01.09 Practice approved shop dress code for safe operation; include the necessary personal safety equipment.

01.10 Pass a general lab safety test.

01.11 Demonstrate acceptable employee health habits.

01.12 Demonstrate knowledge of the "Right-to-Know" law.

01.13 Pass a safety test related to the individual's specialty area(s).

01.14 Practice approved methods for the disposal of waste materials.

CTE Standards and Benchmarks

01.15 Read, comprehend and follow instructions on warning labels.

01.16 Demonstrate common sense when working with others.

01.17 Demonstrate a working knowledge of the safety color code.

02.0 Demonstrate understanding of graphic communications occupations and processes. The student will be able to:

02.01 Define the role of graphics in a free enterprise system.

02.02 Identify printing markets and types of printing businesses.

02.03 List the rank of the printing industry among other industries.

02.04 Identify the major printing processes.

02.05 List the advantages of each major process.

02.06 List the disadvantages of each major process.

02.07 Identify the products produced by each major process.

02.08 List the business flow of printing from initial need to final product.

02.09 List the technical production flow from idea to finished product.

02.10 Identify major occupations in the graphic arts.

02.11 List the primary responsibilities for each occupation.

02.12 Identify basic salary/wage expectation ranges for the local area.

03.0 Demonstrate proficiency in art and copy preparation. The student will be able to:

03.01 Demonstrate how to prepare thumbnail layouts.

03.02 Demonstrate how to prepare rough layouts.

03.03 Demonstrate how to prepare comprehensive layouts; include a finished working dummy.

03.04 Employ the use of printer's measurements to compute inches, fractions, points, picas, decimals, percentages, and proportions.

03.05 Check and compare the completed original to comprehensive layouts for final proofing.

CTE Standards and Benchmarks

04.0 Demonstrate proficiency in prepress/imaging operations. The student will be able to:

04.01 Identify basic equipment and tools and the safety rules pertaining to prepress/imaging operations.

04.02 Demonstrate how to choose type using the correct size and format.

04.03 Identify the fundamentals and uses of type.

04.04 Identify the types of items that can be designed and produced using a page layout program.

04.05 Demonstrate keyboarding skills.

04.06 State how to organize a file management system for opening, copying, saving and deleting files.

04.07 Demonstrate file management operations for opening, copying, saving and deleting files.

04.08 Demonstrate how to log-on/boot-up and print from a page layout program; demonstrate a functional knowledge of computer commands/codes/menus/palettes for the software in use.

04.09 Demonstrate how to set text with appropriate margins, formatting, gutters, leading, headings, etc.

04.10 Demonstrate how to flow copy from a word processing program according to job specifications.

**Florida Department of Education
Student Performance Standards**

Course Title: Basic Offset Press Operations
Course Number: 8230120
Course Credit: 1

Course Description:

This course is designed to provide instruction in performing reproduction photography and image assembly/plate making.

CTE Standards and Benchmarks

05.0 Demonstrate proficiency in image assembly/platemaking. The student will be able to:

05.01 Identify platemaking equipment and tools for offset metal plates.

05.02 Identify plate material types and processing chemicals for making offset metal plates.

05.03 Demonstrate how to produce a correctly exposed and processed metal plate for offset printing.

05.04 Identify computer-to-plate platemaking equipment.

06.0 Demonstrate proficiency in performing basic offset press operations. The student will be able to:

06.01 Identify basic offset duplicator parts and operations.

06.02 Identify basic safety and operation procedures for an offset duplicator or a single-color printing press.

06.03 Demonstrate basic setup procedures for printing a single-color job.

06.04 Produce a printed single-color job using an offset duplicator.

**Florida Department of Education
Student Performance Standards**

Course Title: Basic Finishing and Bindery Operations
Course Number: 8230130
Course Credit: 1

Course Description:

This course is designed to provide instruction in the different procedures for finishing/binding operations and basic skills.

CTE Standards and Benchmarks

07.0 Demonstrate proficiency in basic finishing and bindery operations. The student will be able to:

07.01 Identify the operational and safety parts of a paper cutter.

07.02 Identify the grain direction of paper.

07.03 Demonstrate how to calculate basic paper cuts from a stock sheet.

07.04 Demonstrate how to draw a master cutting diagram for making cuts.

07.05 Demonstrate how to make accurate paper cuts using a mechanized paper cutter.

07.06 Identify basic paper types, weights, grades and classifications used in the printing industry.

07.07 Identify padding materials.

07.08 Demonstrate how to produce correctly made pads of paper.

07.09 Identify stapling and stitching equipment, materials and supplies.

07.10 Demonstrate how to produce side-stitched, saddle-stitched, and stapled products.

07.11 Identify punching/drilling equipment and hand tools.

07.12 Demonstrate how to measure three-ring notebook pages for drilling.

07.13 Demonstrate how to make holes for three-ring notebooks.

07.14 Identify folding equipment and hand tools.

CTE Standards and Benchmarks

07.15	Identify basic folds for printed products.
07.16	Demonstrate how to make a single fold using an automatic folding machine.
07.17	Identify collating equipment and hand tools.
07.18	Demonstrate how to make sets of paper using collating equipment in the correct sequence.
07.19	Demonstrate how to hand collate sets in proper sequence.
07.20	Identify the cut products and the basic procedure for die cutting.
07.21	Identify hot foil stamped products and the basic equipment, materials, and procedures for foil stamping.
08.0	Demonstrate appropriate math skills. The student will be able to:
08.01	Demonstrate how to solve addition, subtraction, multiplication and division of whole numbers.
08.02	Demonstrate how to solve addition, subtraction, multiplication and division of fractions.
08.03	Demonstrate how to solve addition, subtraction, multiplication and division of decimals.
08.04	Demonstrate how to solve fraction to decimal and decimal to fraction conversion problems.
08.05	Demonstrate how to solve decimal to percent and percent to decimal conversion problems.
08.06	Demonstrate how to solve basic ratio and proportion problems.
08.07	Demonstrate how to solve basic linear measurement problems.
08.08	Demonstrate how to solve basic inches to picas and picas to inches conversion problems.
08.09	Demonstrate how to solve inches to points and points to inches conversion problems.
08.10	Demonstrate how to solve cost-calculating problems.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Production Printing Operations
Course Number: 8230140
Course Credit: 1

Course Description:

This course is designed to provide instruction in the different procedures for performing basic film assembly and plate making.

CTE Standards and Benchmarks

09.0	Demonstrate proficiency in performing basic imposition platemaking and digital printer competencies. The student will be able to:
09.01	Read and comprehend production information on a job jacket/ticket.
09.02	Demonstrate the ability to create a single-color layout for an envelope.
09.03	Demonstrate the ability to create a single-color layout for a work-and-turn imposition.
09.04	Demonstrate the ability to create a single-color layout for a work-and-tumble imposition.
09.05	Demonstrate the ability to create a single-color layout for a business card.
09.06	Demonstrate the ability to create a single-color layout for a 4-page sheetwise imposition.
09.07	Demonstrate the ability to assemble a single-color layout for an 8-page signature.
09.08	Demonstrate how to inspect and compare proofs to originals.
09.09	Identify the equipment, tools, and materials used in platemaking operations and the parts, functions, and safety rules related to their operation.
09.10	Apply basic math skills to platemaking operations.
09.11	Identify the different plate materials, types and processing chemicals and the methods of use for each.
09.12	Demonstrate how to expose, process and preserve metal plates.
09.13	Demonstrate how to make additions, deletions and repairs to metal plates.
09.14	Demonstrate how to inspect and compare plates to proofs.

CTE Standards and Benchmarks

09.15	Demonstrate how to properly handle, file, store and retrieve flats and plates.
10.0	Demonstrate proficiency in the operation of a digital production printing system.
10.01	Use the system interface to adjust image tone reproduction quality.
10.02	Program and run a job for cardstock.
10.03	Program and run a job for folded signatures.
10.04	Program and set-up the various inline finishing and binding options.
10.05	Program and run productivity features (e.g., cover sheets, job separator sheets).
10.06	Program and run jobs on a digital color printing system.
10.07	Evaluate and adjust color print quality on a digital color printing system.
10.08	Apply troubleshooting and problem-solving strategies to digital printing systems.
10.09	Demonstrate how to produce a 2-sided, 3-panel brochure.
10.10	Demonstrate how to produce a 4-page newsletter on a digital printing system.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Imaging and Typography
Course Number: 8230150
Course Credit: 1

Course Description:

This course is designed to provide instruction in the different procedures for performing basic film assembly and plate making.

CTE Standards and Benchmarks

11.0	Demonstrate proficiency in basic electronic imaging competencies. The student will be able to:
11.01	Read and comprehend production information on a job jacket/ticket.
11.02	Identify the various types of items that can be designed and produced using desktop publishing.
11.03	Identify the basic principles of design (e.g., unity, contrast, page proportions, and balance).
11.04	Demonstrate how to incorporate basic design principles in hand-drawn sketches and measured layouts.
11.05	Identify line copy.
11.06	Identify continuous tone and halftone copy.
11.07	Identify basic process color principles and four kinds of color printing.
11.08	Demonstrate understanding of electronic color-proofing techniques.
11.09	Identify basic desktop publishing equipment.
11.10	Define the limitations and capabilities of desktop publishing.
11.11	Define the differences in quality of photo-processed output and laser printer output.
11.12	Demonstrate understanding of postscript software capabilities.
11.13	Define the operation of the hardware components of a computer aided publishing system.
11.14	Demonstrate how to select appropriate software for word processing, graphics, scanning and page layout.

CTE Standards and Benchmarks

11.15 Demonstrate a keyboard typing proficiency of a minimum of 30 WPM.

11.16 State how to organize a file management system for opening, copying, saving and deleting files.

11.17 Demonstrate file management operations for opening, copying, saving and deleting files.

11.18 Demonstrate how to prepare a series of hand-drawn sketches for layouts incorporating appropriate marks (e.g., gutters, register marks, fold lines).

11.19 Demonstrate how to prepare a dummy for a multi-page signature.

11.20 Demonstrate an understanding of data exchange.

12.0 Demonstrate proficiency in the use of type and typography. The student will be able to:

12.01 Demonstrate how to measure copy/text in points and picas using a line gauge.

12.02 Demonstrate how to measure type using a type-fitting gauge.

12.03 Demonstrate how to identify x-height, meanline, baseline, ascenders, descenders, and the roles of each in measuring and designing with type.

12.04 Demonstrate how to identify caps, lowercase, uppercase, small caps and ligatures.

12.05 Define dingbats, bullets, rules, and symbols and the uses of each in publications.

12.06 Demonstrate how to distinguish between display (headline) type and body (text) type by point size and style.

12.07 Demonstrate how to identify basic type styles and the uses of each style.

12.08 Determine the weight and posture of type.

12.09 Demonstrate how to distinguish between serif and sans-serif type styles.

12.10 Define letter spacing and kerning of type characters.

12.11 Define word spacing and the relationship of em and en in paragraph spacing.

12.12 Define line spacing and explain the measurement principles for the leading of text.

12.13 Define type arrangements: flush left, ragged right, flush right, ragged left, centered, justified, and forced justified.

12.14 Define and demonstrate copy fitting.

**Florida Department of Education
Student Performance Standards**

Course Title: Page Layout and Scanning Operations
Course Number: 8230160
Course Credit: 1

Course Description:

This course is designed to provide instruction in electronic imaging, and typography.

CTE Standards and Benchmarks

13.0	Demonstrate proficiency in using page layout operations. The student will be able to:
13.01	Demonstrate how to prepare rough layouts.
13.02	Demonstrate how to markup a copy for the production of a printed piece.
13.03	Demonstrate how to select appropriate page layout software for a given job.
13.04	Demonstrate how to log-on/boot-up and print out from a page layout program; demonstrate a functional knowledge of computer commands/codes/menus/palette for the software in use.
13.05	Demonstrate text alignment, element positioning and the rules of page design for printed material.
13.06	Demonstrate how to set-up column grids for an electronic page layout according to job specifications.
13.07	Demonstrate how to set-up/select appropriate pagination for a given job.
13.08	Demonstrate the uses of headers and footers.
13.09	Demonstrate how to set text with appropriate margins, formatting, gutters, leading, headings, etc.
13.10	Demonstrate a proficiency in conducting basic search operations.
13.11	Demonstrate how to place copy from a word processing program into a page layout program according to job specifications.
13.12	Demonstrate how to proofread, edit and make corrections/adjustments to copy on screen.
13.13	Demonstrate how to download fonts.
13.14	Demonstrate how to transfer graphics, rules, and dingbats from an existing file into a publication.

CTE Standards and Benchmarks

13.15	Demonstrate the procedure for cropping graphics electronically.
13.16	Use graphics and text to create a 2-sided, 3-panel brochure for publication.
13.17	Demonstrate how to create a 4-page newsletter using windows, blocks, text, graphics, frames and headings.
13.18	Demonstrate how to create a 2-page newsletter using drop caps for paragraph openings, wraparound (run-around) and graphics.
13.19	Use tints, reverses, and manipulated type for effect to create a printed piece.
13.20	Demonstrate how to produce a multicolor flyer using electronic spot color separations.
13.21	Demonstrate knowledge of the capabilities, advantages, and disadvantages of available page layout programs.
13.22	Demonstrate the use of an electronic dictionary, spell checker, and automatic hyphenation.
14.0	Demonstrate proficiency in scanning operations. The student will be able to:
14.01	Identify the hardware, basic components and operations associated with scanners.
14.02	Identify basic scanner software and its uses and limitations.
14.03	Demonstrate appropriate scanner/program operations for continuous tone copy.
14.04	Demonstrate how to place scanned graphics/photos into existing page layout program.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Course Title: Fundamentals of A/V and Print Technology
Course Type: Orientation/Exploratory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Middle School

Course Number	8260300
CIP Number	148260300M
Grade Level	6-8
Course Length	Semester
Teacher Certification	Refer to the Course Structure section.
CTSO	SkillsUSA
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this course is to give students an opportunity to apply knowledge and skills related to the area of A/V and Print Technology.

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Arts, A/V Technology and Communication career cluster. The content includes, but is not limited to, leadership and employability skills, career exploration, project development, and the utilization of technology. Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8260300	Fundamentals of A/V and Print Technology	BUS ED 1@2 PRINTING @7 7G TEC ED 1 @ 2 ENG&TEC ED1@2 TV PRO TEC @7 7G	Semester

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate leadership skills.
- 02.0 Demonstrate employability skills as they relate to the A/V Technology, Film, and Printing Technology industries.
- 03.0 Demonstrate effective communication skills.
- 04.0 Analyze careers in the A/V Technology, Film, and Printing Technology industries.
- 05.0 Select and use tools and equipment.
- 06.0 Develop a project related to A/V Technology, Film, and Printing Technology.
- 07.0 Utilize technology as it relates to the A/V Technology, Film, and Printing Technology industries.
- 08.0 Demonstrate the skills involved in effective resource management.
- 09.0 Identify components of network systems.
- 10.0 Describe and use communication features of information technology.

**Florida Department of Education
Student Performance Standards**

Course Title: Fundamentals of A/V and Print Technology
Course Number: 8260300
Course Length: Semester

Course Description:

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the A/V Technology, Film, and Printing Technology industries. The content includes, but is not limited to, leadership and employability skills, career exploration, project development, and the utilization of technology.

CTE Standards and Benchmarks

01.0	Demonstrate leadership skills. The student will be able to:
01.01	Identify the roles and responsibilities of members of professional and community service organizations, including career and technical student organizations.
01.02	Work cooperatively as a group member to achieve organizational goals.
01.03	Demonstrate leadership roles and organizational responsibilities.
01.04	Identify and utilize the planning process.
01.05	Develop a personal growth project.
02.0	Demonstrate employability skills as they relate to the A/V Technology, Film, and Printing Technology industries. The student will be able to:
02.01	Identify personal talents and abilities that can contribute to positive self-esteem and success in the workplace.
02.02	Practice teamwork skills.
02.03	Practice employability skills (e.g., time/resource management, communication, grooming/appearance).
02.04	Practice positive work ethics and identify negative work ethics.
02.05	Exhibit work expectations of an employer in the A/V Technology, Film, and Printing Technology industries.
02.06	Apply math, reading, science, and critical thinking skills as they relate to the A/V Technology, Film, and Printing Technology industries.
03.0	Demonstrate effective communication skills. The student will be able to:
03.01	Describe why communication is the basis for all relationships.

CTE Standards and Benchmarks

03.02 Distinguish between non-assertive, assertive, and aggressive communication.

03.03 Demonstrate communication skills that promote positive relationships in the workplace.

03.04 Practice active listening skills.

03.05 Demonstrate the ability to utilize conflict resolution skills through role-play.

04.0 Analyze careers in the A/V Technology, Film, and Printing Technology industries. The student will be able to:

04.01 Describe careers in the A/V Technology, Film, and Printing Technology industries.

04.02 Classify careers from entry level to professional level.

04.03 Explore entrepreneurship opportunities in the A/V Technology, Film, and Printing Technology industries.

04.04 Research and present information on an A/V Technology, Film, and Printing Technology career to include roles and responsibilities, employment opportunities and requirements for education and training.

05.0 Select and use tools and equipment. The student will be able to:

05.01 Demonstrate knowledge of tools and their functions.

05.02 Demonstrate the proper and safe use of tools and equipment.

05.03 Practice care and maintenance of tools and equipment.

06.0 Develop a project related to A/V Technology, Film, and Printing Technology. The student will be able to:

06.01 Select materials and supplies for an A/V Technology project.

06.02 Calculate the costs of a given A/V Technology project.

06.03 Interpret written directions for constructing an A/V Technology project.

06.04 Apply math skills and construct an A/V Technology project.

07.0 Utilize technology as it relates to the A/V Technology, Film, and Printing Technology industries. The student will be able to:

07.01 Identify technology utilized in the A/V Technology, Film, and Printing Technology industries.

07.02 Analyze technology trends impacting the A/V Technology, Film, and Printing Technology industries.

07.03 Utilize technology.

CTE Standards and Benchmarks

08.0 Demonstrate the skills involved in effective resource management. The student will be able to:

08.01 Identify steps of the decision-making process.

08.02 Distinguish between a need and a want.

08.03 Explain how values and goals affect decision-making.

08.04 Develop a budget and savings plan.

08.05 Analyze the relationship between resources and the attainment of lifestyle goals.

09.0 Identify components of network systems. The student will be able to:

09.01 Identify structure to access the Internet, including hardware and software components.

09.02 Identify and configure user customization features in web browsers (e.g., preferences, caching, cookies).

09.03 Recognize essential database concepts.

09.04 Define and use additional networking and Internet services.

10.0 Describe and use communication features of information technology. The student will be able to:

10.01 Define important Internet communications protocols and their roles in delivering basic Internet services.

10.02 Identify basic principles of the Domain Name System (DNS).

10.03 Identify security issues related to Internet clients.

10.04 Identify and use the principles and common applications of personal information management (PIM).

10.05 Efficiently transmit text and binary files using popular Internet services.

10.06 Represent technical issues to a non-technical audience.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Course Title: Fundamentals of Telecommunications
Course Type: Orientation/Exploratory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Middle School

Course Number	8260400
CIP Number	148260400M
Grade Level	6-8
Course Length	Semester
Teacher Certification	Refer to the Course Structure section.
CTSO	SkillsUSA
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Arts, A/V Technology and Communication career cluster. The content includes, but is not limited to, the development of leadership skills, communication skills, and employability skills; resource management; exploration of Arts and A/V careers; the science and technology of transmitting information electronically by wires or radio signals with integrated encoding and decoding equipment.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8260400	Fundamentals of Telecommunications	COMP SVC 7G ELECTRICAL @7 7G ELECTRONIC @ 7 7G TELCOM 7G TV PRO TEC @7 7G	Semester

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate leadership skills.
- 02.0 Demonstrate employability skills as they relate to the Telecommunications industry.
- 03.0 Demonstrate effective communication skills.
- 04.0 Analyze careers in the Telecommunications industry.
- 05.0 Select and use tools and equipment.
- 06.0 Develop a project related to Telecommunications.
- 07.0 Utilize technology as it relates to the Telecommunications industry.
- 08.0 Demonstrate the skills involved in effective resource management.
- 09.0 Identify components of network systems.
- 10.0 Describe and use communication features of information technology.

**Florida Department of Education
Student Performance Standards**

Course Title: Fundamentals of Telecommunications
Course Number: 8260400
Course Length: Semester

Course Description:

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in Telecommunications.

CTE Standards and Benchmarks	
01.0	Demonstrate leadership skills. The student will be able to:
01.01	Identify roles and responsibilities of members of professional and community service organizations, including career and technical student organizations.
01.02	Work cooperatively as a group member to achieve organizational goals.
01.03	Demonstrate leadership roles and organizational responsibilities.
01.04	Identify and utilize the planning process.
01.05	Develop a personal growth project.
02.0	Demonstrate employability skills as they relate to the Telecommunications industry. The student will be able to:
02.01	Identify personal talents and abilities that can contribute to positive self-esteem and success in the workplace.
02.02	Practice teamwork skills.
02.03	Practice employability skills.
02.04	Practice positive work ethics and identify negative work ethics.
02.05	Exhibit work expectations of an employer in the Telecommunications industry.
02.06	Apply math, reading, science, and critical thinking skills as they relate to the Telecommunications industry.
03.0	Demonstrate effective communication skills. The student will be able to:
03.01	Describe why communication is the basis for all relationships.

CTE Standards and Benchmarks	
03.02	Distinguish between non-assertive, assertive, and aggressive communication.
03.03	Demonstrate communication skills that promote positive relationships in the work place.
03.04	Practice active listening skills.
03.05	Utilize conflict resolution skills.
04.0	Analyze careers in the Telecommunications industry. The student will be able to:
04.01	Describe careers in the Telecommunications industry.
04.02	Classify careers from entry level to professional level.
04.03	Explore entrepreneurship opportunities in the Telecommunications industry
04.04	Research and present information on a Telecommunications career to include roles and responsibilities, employment opportunities and requirements for education and training.
05.0	Select and use tools and equipment. The student will be able to:
05.01	Identify and select the appropriate tool for the assignment.
05.02	Demonstrate the proper and safe use of tools and equipment.
05.03	Practice care and maintenance of tools and equipment.
06.0	Develop a project related to Telecommunications. The student will be able to:
06.01	Apply the principals and elements of design in selecting a Telecommunications project.
06.02	Interpret written directions for assembling/constructing a Telecommunications project.
06.03	Apply math skills and construct a Telecommunications project.
07.0	Utilize technology as it relates to the Telecommunications industry. The student will be able to:
07.01	Identify technology utilized in the Telecommunications industry.
07.02	Analyze technology trends impacting the Telecommunications industry.
07.03	Utilize technology.
08.0	Demonstrate the skills involved in effective resource management. The student will be able to:

CTE Standards and Benchmarks

08.01 Identify steps of the decision-making process.

08.02 Distinguish between a need and a want.

08.03 Explain how values and goals affect decision-making.

08.04 Develop a budget and savings plan.

08.05 Analyze the relationship between resources and the attainment of lifestyle goals.

09.0 Identify components of network systems. The student will be able to:

09.01 Identify structure to access the Internet, including hardware and software components.

09.02 Identify and configure user customization features in web browsers, including preferences, caching, and cookies.

09.03 Recognize essential database concepts.

09.04 Define and use additional networking and Internet services.

10.0 Describe and use communication features of information technology. The student will be able to:

10.01 Define important Internet communications protocols and their roles in delivering basic Internet services.

10.02 Identify basic principles of the Domain Name System (DNS).

10.03 Identify security issues related to Internet clients.

10.04 Identify and use principles of personal information management (PIM), including common applications.

10.05 Efficiently transmit text and binary files using popular Internet services.

10.06 Represent technical issues to a non-technical audience.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Course Title: Fundamentals of Visual and Performing Arts
Course Type: Orientation/Exploratory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Middle School

Course Number	8260500
CIP Number	148260500M
Grade Level	6-8
Course Length	Semester
Teacher Certification	Refer to the Course Structure section.
CTSO	SkillsUSA
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Arts, A/V Technology and Communication career cluster. The content includes, but is not limited to, topics pertaining to the Visual Arts, Performing Arts, Journalism, and Broadcasting industries. Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8260500	Fundamentals of Visual and Performing Arts	BUS DP @7 %G BUS ED 1 @2 CLERICAL @7 7G COMM ART @7 7G COMP SCI 6 @2 ELECT DP @7 %7 %G GRAPH ARTS 4 JOURNALISM 1 MG ENG C MKTG 1 PHOTOG @7 7G PRINTING @7 7G SECRETAR 7 G TEC ED 1@2 ENG&TEC ED1@2 TEC ELEC @7 TV PRO TEC @7 7G VOE @7	Semester

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate leadership skills.
- 02.0 Demonstrate employability skills as they relate to the Visual Arts, Performing Arts, Journalism and Broadcasting industries.
- 03.0 Demonstrate effective communication skills.
- 04.0 Analyze careers in the Visual Arts, Performing Arts, Journalism and Broadcasting industries.
- 05.0 Select and use tools and equipment.
- 06.0 Develop a project related to Visual Arts, Performing Arts, Journalism and/or Broadcasting.
- 07.0 Utilize technology as it relates to the Visual Arts, Performing Arts, Journalism and Broadcasting industries.
- 08.0 Demonstrate the skills involved in effective resource management.

**Florida Department of Education
Student Performance Standards**

Course Title: Fundamentals of Visual and Performing Arts
Course Number: 8260500
Course Length: Semester

Course Description:

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Visual Arts, Performing Arts, and Journalism and Broadcasting industries.

CTE Standards and Benchmarks

01.0 Demonstrate leadership skills. The student will be able to:

01.01 Identify the roles and responsibilities of members of professional and community service organizations, including career and technical student organizations.

01.02 Work cooperatively as a group member to achieve organizational goals.

01.03 Demonstrate leadership roles and organizational responsibilities.

01.04 Identify and utilize the planning process.

01.05 Develop a personal growth project.

02.0 Demonstrate employability skills as they relate to the Visual Arts, Performing Arts, Journalism and Broadcasting industries. The student will be able to:

02.01 Identify personal talents and abilities that can contribute to positive self-esteem and success in the workplace.

02.02 Practice teamwork skills.

02.03 Practice employability skills.

02.04 Practice positive work ethics and identify negative work ethics.

02.05 Identify the work expectations of an employer in each of the specified industries.

02.06 Apply core subjects and/or STEM and critical thinking skills as they relate to the specified industries.

03.0 Demonstrate effective communication skills. The student will be able to:

03.01 Describe how communication forms the basis for all relationships.

CTE Standards and Benchmarks

03.02	Distinguish between non-assertive, assertive, and aggressive communication.
03.03	Demonstrate communication skills that promote positive relationships in the workplace.
03.04	Practice active listening skills.
03.05	Utilize conflict resolution skills.
04.0	Analyze careers in the Visual Arts, Performing Arts, Journalism and Broadcasting industries. The student will be able to:
04.01	Identify careers in the Visual Arts, Performing Arts, Journalism and Broadcasting industries.
04.02	Classify careers from entry level to professional level.
04.03	Explore entrepreneurship opportunities in the specified industries.
04.04	Research and present information on an industry-related career; include roles and responsibilities, employment opportunities and the requirements for education and training.
05.0	Select and use tools and equipment. The student will be able to:
05.01	Identify and select the appropriate tool for the assignment.
05.02	Demonstrate the proper and safe use of tools and equipment.
05.03	Practice care and maintenance of tools and equipment.
06.0	Develop a project related to Visual Arts, Performing Arts, Journalism and/or Broadcasting. The student will be able to:
06.01	Select materials and supplies for a Visual Arts, Performing Arts, Journalism and Broadcasting project.
06.02	Plan a Visual Arts, Performing Arts, Journalism or Broadcasting project; apply math skills, calculate costs for the project, and construct the project.
06.03	Interpret written directions for constructing a Visual Arts, Performing Arts, Journalism and Broadcasting project.
07.0	Utilize technology as it relates to the Visual Arts, Performing Arts, Journalism and Broadcasting industries. The student will be able to:
07.01	Identify technology utilized in Visual Arts, Performing Arts, Journalism and Broadcasting.
07.02	Analyze technology trends impacting the specified industries.
07.03	Utilize technology related to the specified industries.

CTE Standards and Benchmarks

08.0 Demonstrate the skills involved in effective resource management. The student will be able to:

08.01 Identify steps of the decision-making process.

08.02 Distinguish between a need and a want.

08.03 Explain how values and goals affect decisions.

08.04 Develop a budget and savings plan.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

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Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

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SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Program Title: Fabric Construction
Program Type: Non Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Non Career Preparatory

Program Number	8500380
CIP Number	09200111PA
Grade Level	9-12
Program Length	.5 credit
Teacher Certification	Refer to the Program Structure section.
CTSO	FCCLA
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to give students an opportunity to apply knowledge and skills related to the area of Arts, A/V Technology and Communication.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

This course is designed to prepare students to identify the characteristics of fibers, fabrics and textiles; to interpret consumer protection laws related to clothing, textiles, and home décor items; and to construct garments and/or home décor items.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is planned instruction consisting of one half-credit (.5) course.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	Level	Graduation Requirement
8500380	Fabric Construction	FAM CON SC 1	0.5 credit	2	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Analyze characteristics, cost and care of fabric and fibers.
- 02.0 Demonstrate use of pattern envelope information and guide sheet instructions at the beginner level.
- 03.0 Demonstrate use of basic sewing equipment.
- 04.0 Demonstrate construction techniques at the beginner level.
- 05.0 Demonstrate use of reading and writing skills.

**Florida Department of Education
Student Performance Standards**

Course Title: **Fabric Construction**
Course Number: **8500380**
Course Credit: **.5 credit**

Course Description:

This course is designed to prepare students to identify the characteristics of fibers, fabrics and textiles; to interpret consumer protection laws related to clothing, textiles, and home décor items; and to construct garments and/or home décor items.

CTE Standards and Benchmarks	
01.0	Analyze characteristics, cost and care of fabric and fibers. The student will be able to:
01.01	Identify the characteristics, use, and care of basic fibers and fabrics.
01.02	Identify methods of constructing fabrics.
01.03	Explain the use and purpose of fabric finishes.
01.04	Explain the differences between hangtags and required labeling.
01.05	Identify consumer laws as related to clothing and textiles.
01.06	Interpret the purposes of labeling to protect the consumer.
02.0	Demonstrate use of pattern envelope information and guide sheet instructions at the beginner level. The student will be able to:
02.01	Identify factors to consider when selecting patterns and garments.
02.02	Demonstrate use of a tape measure to take accurate measurements.
02.03	Determine pattern size based on measurements.
02.04	Determine yardage and notions needed to complete a garment.
02.05	Complete pattern preparation.
02.06	Correctly pin, mark, and cut pieces of the pattern.
02.07	Identify and interpret symbols found on pattern pieces.

CTE Standards and Benchmarks

02.08	Determine the order in which pieces are to be assembled.
02.09	Read and comprehend guide sheet instructions.
03.0	Demonstrate use of basic sewing equipment. The student will be able to:
03.01	Identify and use small sewing equipment.
03.02	Identify parts of sewing machine, their function, safety and maintenance.
03.03	Read and understand instructions in a sewing machine manual.
03.04	Demonstrate how to correctly thread the machine and bobbin.
03.05	Demonstrate proper stitching techniques.
03.06	Identify and use correct pressing materials.
03.07	Determine the uses of various presser feet and machine attachments.
04.0	Demonstrate construction techniques at the beginner level. The student will be able to:
04.01	Construct a machine stitched hem.
04.02	Complete appropriate seam and edge finishes including serging.
04.03	Attach a button by hand using a needle and thread.
04.04	Make a casing using elastic.
04.05	Create a pillow using straight and curved seams.
04.06	Construct a dart.
04.07	Apply a facing to a garment.
04.08	Complete a hem using a machine stitch and a hand stitch.
04.09	Demonstrate the ability to interpret instructions from the guide sheet to create a simple garment.
04.10	Complete a project to be donated to a local charity.
04.11	Demonstrate mending techniques for existing garments.

CTE Standards and Benchmarks

04.12 Recycle an old garment and create something new using basic sewing techniques.

05.0 Demonstrate use of reading and writing skills. The student will be able to:

05.01 Create a written description of the skills used in creating their garment.

05.02 Create a label for care of the garment using writing skills.

05.03 Design a fictional product line to include the following: company logo, description of fabrics used, types of garments sold and a persuasive essay on what makes these garments superior to others on the market.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

Florida Family, Career and Community Leaders of America (FCCLA) is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Program Title: Fashion Technology and Design Services
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8506400
CIP Number	0419090606
Grade Level	9-12
Program Length	4 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	FCCLA
SOC Codes (all applicable)	41-2031 – Retail Salespersons 51-6052 – Tailors, Dressmakers, and Custom Sewers 51-6092 – Fabric and Apparel Patternmakers 27-1022 -- Fashion Designers
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment or continued study in the fashion technology and design services industry.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and the relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, the following aspects of the fashion technology and design services industry: planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues, and health, safety, and environmental issues.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of four (4) credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8506405	Design Services Core	APPRL MFG ϕ 7 @7G FAM CON SC 1	1 credit	41-2031	2	PA
8506410	Principles of Fashion Technology and Design Services	FASH TECH 7G HME EC OCC ϕ 7	1 credit	51-6052	2	PA
8506420	Pattern Design Techniques	INT DES 7G TAILORING ϕ 7	1 credit	51-6092	3	PA
8506430	Fashion Design Specialist	TEC ED 1 @2 ENG&TEC ED1@2	1 credit	27-1022	3	PA

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate leadership and organizational skills.
- 02.0 Demonstrate appropriate basic skills essential to working in design occupations.
- 03.0 Identify and exhibit employment skills.
- 04.0 Describe the relationship between human factors and design services.
- 05.0 Identify the characteristics and care of textiles.
- 06.0 Select and safely use tools and equipment.
- 07.0 Operate and maintain a conventional and/or commercial/industrial sewing machine.
- 08.0 Operate specialty machines (minimum of two machines, if available).
- 09.0 Select and prepare materials.
- 10.0 Construct a machine-sewn design project for inclusion in a design portfolio.
- 11.0 Develop a design portfolio.
- 12.0 Identify employment opportunities in Fashion Technology and Design Services.
- 13.0 Identify and exhibit employment skills for occupations related to Fashion Technology and Design Services.
- 14.0 Demonstrate an understanding of the elements and principles of design.
- 15.0 Demonstrate an understanding of the terminology used in the apparel industry.
- 16.0 Operate specialty machines (if available).
- 17.0 Demonstrate skill in the construction of simple garments.
- 18.0 Demonstrate an understanding of the ways eco-fashion decisions impact the environment, consumer health and the working conditions of people in the fashion industry.
- 19.0 Research the ways fashion design is affected by history and culture.
- 20.0 Demonstrate sketching and freehand drawing skills.
- 21.0 Demonstrate an understanding of the uses of technology in the fashion industry.
- 22.0 Identify the psychological and practical needs of clothing for special markets.
- 23.0 Create an original pattern for a garment.
- 24.0 Demonstrate alteration skills on a sample or garment.
- 25.0 Demonstrate clothing repair on a garment or sample.
- 26.0 Identify and describe the different specialties related to Fashion Technology and Design Services (e.g., Window Display, Fashion Design Assistant, Tailor's Assistant, Personal Shopper, and Stylist).
- 27.0 Select one specialty area and complete the student performance standards for that area.
- 28.0 (Optional) Schedule and participate in a Fashion Technology and Design Services job shadowing experience.
- 29.0 Finalize a professional portfolio according to industry standards.

**Florida Department of Education
Student Performance Standards**

Course Title: Design Services Core
Course Number: 8506405
Course Credit: 1

Course Description:

This course is designed to develop competencies in areas of the interior design industry or fashion technology and design industry. This course includes essential basic skills for working in Interior Design Services, leadership and organizational skills, basic principles of design, textile characteristics and care, employability skills, relationship between human factors and interior design, the safe use of tools and equipment, and the selection of appropriate materials.

CTE Standards and Benchmarks	
01.0	Demonstrate leadership and organizational skills. The student will be able to:
01.01	Identify professional and youth organizations.
01.02	Identify the purposes and functions of professional and youth organizations.
01.03	Identify the roles and responsibilities of members.
01.04	Demonstrate cooperation as a group member to achieve organizational goals.
01.05	Demonstrate confidence in leadership roles and organizational responsibilities.
02.0	Demonstrate appropriate basic skills essential to working in design services occupations. The student will be able to:
02.01	Identify the knowledge, skills, and attitudes necessary to perform occupational tasks (e.g., email, phone, conversations with clients).
02.02	Demonstrate the communication competencies required to perform occupational tasks.
03.0	Identify and exhibit employment skills. The student will be able to:
03.01	Use the Internet to conduct a job search.
03.02	Research and synthesize information about an industry-related employment opportunity or advanced training opportunities; include information pertaining to local post-secondary educational programs and training opportunities.
03.03	Demonstrate proficiency in current technology and software related to the fashion design industry; create, revise, retrieve and verify information.

CTE Standards and Benchmarks

03.04	Apply the principles of time management, work simplification, and teamwork when performing assigned tasks.
03.05	Demonstrate pride in the quality of work performed.
04.0	Describe the relationship between human factors and design services. The student will be able to:
04.01	Define the <i>elements</i> of design applicable to interior design (space, line, shape, form, texture, color).
04.02	Define the <i>principles</i> of design applicable to design (proportion, scale, balance, emphasis, rhythm, harmony).
04.03	Explain the impact of human factors (psychological, physiological, social) on decisions relating to design services processes.
04.04	Identify and describe the modifications necessary to accommodate individuals with special needs.
04.05	Identify and describe the impact of human needs and wants on the cost of design services and customized projects.
04.06	Identify and describe the importance of barrier-free design and accessibility related to design services.
04.07	Identify and describe the characteristics of interior spaces, furnishings, and garments.
04.08	Take accurate measurements to determine the correct size home furnishings items.
05.0	Identify the characteristics and care of textiles. The student will be able to:
05.01	Identify and describe fiber characteristics.
05.02	Identify and describe types of fabric construction (e.g., knitted, woven, tufted).
05.03	Identify and describe types of fabric finishes (e.g., dyed, printed, performance/quality enhancements).
05.04	Identify and describe different types of natural and manufactured textiles; identify the pros/cons, uses, and care of each type.
05.05	Identify the laws and regulations governing the textile industry; include labeling laws and care symbols.
06.0	Select and safely use tools and equipment. The student will be able to:
06.01	Identify the tools and equipment used in design services for sewing, cutting, measuring, fabric marking, and drafting.
06.02	Select the appropriate tools and equipment for assigned projects; explain why the selection is appropriate for the project.
06.03	Demonstrate proper and safe usage of tools and equipment.
06.04	Identify and demonstrate safety procedures for the use of conventional sewing machines and home sergers, and pressing equipment.

CTE Standards and Benchmarks

06.05	Explain the importance of observing Occupational Safety and Health Administration (OSHA) rules and regulations.
06.06	Clean and maintain various types of tools and equipment.
06.07	Keep an inventory record of tools, equipment, supplies, and materials using computer application software or other formatting options (e.g., written records).
06.08	Research innovations in materials and technologies that contribute to safeguards in the tools and equipment used in interior design services.
06.09	Identify and apply drafting tools and techniques to a specific design services project (e.g., architectural ruler, light box, protractor, floor plans to scale, one-point perspective).
07.0	Operate and maintain a conventional and/or commercial/industrial sewing machine. The student will be able to:
07.01	Identify the parts of a sewing machine.
07.02	Select the needles that appropriate for different fabric types; identify the process and demonstrate needle insertion.
07.03	Identify the steps and demonstrate threading a sewing machine.
07.04	Diagram and demonstrate the ability to wind the bobbin, thread the bobbin case, and insert the bobbin correctly into a sewing machine.
07.05	Demonstrate straight stitching.
07.06	Identify and demonstrate stitch length and width selection.
07.07	Demonstrate utility and decorative stitches.
07.08	Identify the tension and demonstrate tension adjustment.
07.09	Demonstrate cleaning and lubricating the machine following manufacturer's instructions.
08.0	Operate specialty machines (minimum of two machines, if available). The student will be able to identify and operate at least two of the following machines:
08.01	Electronic programmable machine.
08.02	Serger.
08.03	Pleater, ruffler foot, or gathering foot.
08.04	Blindstitch machine or blind hemming foot.
08.05	Straight stitch machine.

CTE Standards and Benchmarks

08.06	Chain stitch machine or five thread serger.
08.07	Cutting machine or electric cutting system.
08.08	Bar tack or programmable/computerized sewing machine.
08.09	Zigzag machine.
09.0	Select and prepare materials. The student will be able to:
09.01	Identify and match pattern pieces.
09.02	Read and interpret instructions and specifications.
09.03	Identify fabric content.
09.04	Prepare fabric.
09.05	Adjust patterns according to pattern/teacher instructions.
09.06	Lay out, pin, cut, and mark fabric according to a pattern or teacher instructions.
09.07	Demonstrate stay stitching and ease stitching.
09.08	Match grain lines and patterns according to a pattern or teacher instructions.
09.09	Mark fabric for assembly according to a pattern or teacher instructions.
09.10	Mark fabric for trims according to a pattern or teacher instructions.
09.11	Match thread with fabric.
09.12	Identify, select, and use content labels according to fabric requirements.
10.0	Construct a machine-sewn design project for inclusion in a design portfolio. The student will be able to:
10.01	Construct projects that include seaming, darts, interfacing, seam finishing, hemming, closures and pockets.
10.02	Line up notches, dots, or clips according to a pattern or teacher instructions.
10.03	Stitch on woven, stretch, or specialty fabrics using the appropriate stitch length.
10.04	Demonstrate correct pressing techniques by following fabric requirements.

CTE Standards and Benchmarks

10.05	Demonstrate machine hemming according to machine manual instructions.
11.0	Develop a design portfolio. The student will be able to:
11.01	Assemble a portfolio; include all work samples.
11.02	Assemble a Technical Sewing Samples binder.
11.03	Construct basic hand-stitching techniques (e.g., running, backstitch, overcast, blanket).
11.04	Demonstrate stay stitching and ease stitching.
11.05	Demonstrate straight seams, clean finish and other seam finishes; include common seam allowances (e.g., 1/4", 5/8").
11.06	Demonstrate hemming techniques (e.g., slip stitch, blind hem stitch).

**Florida Department of Education
Student Performance Standards**

Course Title: Principles of Fashion Technology and Design Services
Course Number: 8506410
Course Credit: 1

Course Description:

This course is designed to develop competencies in areas of the interior design industry or fashion technology and design industry. This course includes essential basic skills for working in Interior Design Services, leadership and organizational skills, basic principles of design, textile characteristics and care, employability skills, relationship between human factors and interior design, the safe use of tools and equipment, and the selection of appropriate materials.

CTE Standards and Benchmarks	
12.0	Identify employment opportunities in Fashion Technology and Design Services. The student will be able to:
12.01	Secure information about a job and advanced training opportunities for the job; report in a written or oral format.
12.02	Demonstrate proficiency in current technology and software related to the fashion design industry; create, revise, retrieve and verify information.
12.03	Apply the principles of time management, work simplification, and teamwork when performing assigned tasks.
12.04	Demonstrate pride in the quality of work performed.
12.05	Identify career options in Fashion Technology and Design Services (e.g., entrepreneurship).
12.06	Create a presentation on non-traditional career paths (e.g., costume design, theater, entertainment, buyers, and fabric store owners) in the garment/textile industry.
12.07	Analyze current trends as they affect the future of occupations in Fashion Technology and Design Services.
12.08	Identify different earning and wage level options for occupations in Fashion Technology and Design Services.
13.0	Identify and exhibit employment skills for occupations related to Fashion Technology and Design Services. The student will be able to:
13.01	Identify and list documents that may be required to apply for a job.
13.02	Complete a job application form accurately.
13.03	Demonstrate competence in job interview techniques; use role playing techniques.

CTE Standards and Benchmarks

13.04	Identify and demonstrate appropriate responses to criticism from an employer, supervisor, co-worker, or customer.
13.05	Identify and demonstrate acceptable work habits.
13.06	Demonstrate knowledge of how to make job changes appropriately.
13.07	Identify and describe acceptable employee health and hygiene habits.
13.08	Demonstrate customer relations skills by synthesizing given instructions.
13.09	Develop and create a résumé and portfolio.
13.10	Continue to enhance the professional portfolio; include résumé and samples/evidence.
14.0	Demonstrate an understanding of the elements and principles of design. The student will be able to:
14.01	Identify and explain the elements of design (e.g., texture, pattern, line, form, shape, space, color, and light) and how various effects can be achieved.
14.02	Identify and explain the principles of design and how they can be used (e.g., proportion, scale, balance, rhythm, emphasis, and harmony).
14.03	Apply the elements and principles of design to Fashion Technology and Design Services.
14.04	Develop a project applying color and color schemes in a design.
14.05	Use the laws of design to evaluate a design project.
14.06	Create an elements and principles section for a design portfolio.
15.0	Demonstrate an understanding of the terminology used in the apparel industry. The student will be able to:
15.01	Complete a research project dealing with aspects of fashion retail and production; include terminology, labeling, designers, manufacturers and stores used within the apparel industry.
16.0	Operate specialty machines (if available). The student will be able to identify and operate at least two of the following machines:
16.01	Electronic programmable machines.
16.02	Serger.
16.03	Straight stitch machine.
16.04	Zigzag machine.

CTE Standards and Benchmarks

16.05	Embroidery machine.
17.0	Demonstrate skill in the construction of simple garments. The student will be able to:
17.01	Identify common ready-to-wear sizes.
17.02	Identify and describe the characteristics of a properly fitted garment.
17.03	Take accurate body measurements, select pattern size, and determine figure type.
17.04	Interpret verbal, written, and visual directions.
17.05	Prepare fabric and adjust patterns by following pattern directions.
17.06	Lay out, pin, cut, and mark fabric according to pattern specifications.
17.07	Demonstrate stay stitching and ease stitching.
17.08	Demonstrate stitching darts and tucks.
17.09	Identify and match garment pieces using markings; stitch according to directions.
17.10	Match plaids, stripes and one-way designs.
17.11	Demonstrate correct pressing techniques according to fabric requirements.
17.12	Demonstrate casing and elastic installation.
17.13	Demonstrate machine hemming according to machine manual instructions.
17.14	Identify different types of sergers and their characteristics.
18.0	Demonstrate an understanding of the importance of how eco-fashion decisions impact the environment, consumer health and the working conditions of people in the fashion industry. The student will be able to:
18.01	Demonstrate an understanding of eco-fashion.
18.02	Identify materials that can be used to make eco-friendly fashions and accessories; describe why these materials are eco-friendly.
18.03	Research innovations in materials and technologies that have contributed to safeguards in the tools and equipment used in fashion technology and design services.
18.04	Compare the working conditions of employees when materials are produced following eco-friendly guidelines and when they are not.

CTE Standards and Benchmarks

18.05	Research methods for using vegetable and plant materials for eco-friendly fashions and replacing these materials into the environment.
18.06	Describe ways to be eco-friendly and the environmental and social responsibilities of eco-friendly methods.
18.07	Design and create an eco-friendly fashion product.

**Florida Department of Education
Student Performance Standards**

Course Title: Pattern Design Techniques
Course Number: 8506420
Course Credit: 1

Course Description:

This course is designed to further develop competencies in the area of Fashion Technology and Design Services; this course includes researching the effects of history and culture on design, sketching and freehand drawing, the use of technology in the fashion industry, recognition of clothing needs for special populations, and the creation of an original pattern.

CTE Standards and Benchmarks	
19.0	Research the ways fashion design is affected by history and culture. The student will be able to:
19.01	Identify design periods from 1900 to the present.
19.02	Explain the influence of earlier design periods on contemporary design.
19.03	Describe the elements and principles of design as they relate to a particular time period/culture.
19.04	Create a multimedia presentation detailing a selected design period.
20.0	Demonstrate sketching and freehand drawing skills. The student will be able to:
20.01	Demonstrate sketching and shading techniques.
20.02	Create inspiration boards to display sketches and drawings.
20.03	Develop a design collection according to determined criteria and include in a professional portfolio; include examples that demonstrate sketching and shading techniques.
21.0	Demonstrate an understanding of the uses of technology in the fashion industry. The student will be able to:
21.01	Research and list software options available for fashion design services.
21.02	Demonstrate an understanding of how contemporary technologies (CAD, electronic sewing, knitting, embroidery machines, sergers) are used in the creation of fashion products (e.g., fashion profiles, fabrics, garments).
21.03	Analyze how specific technologies are used in the fashion design industry.

CTE Standards and Benchmarks

21.04	Create a fashion product using two or more technologies appropriately.
21.05	Research innovations in materials and technologies that have contributed to safeguards in tools and equipment.
21.06	Identify the development of tools, equipment and technology used in fashion design services as they relate to particular historical periods.
22.0	Identify the psychological and practical needs of clothing for special markets. The student will be able to:
22.01	List human and environmental factors that could impact a design (e.g., uniforms, clothing in non-standard sizes, clothing for people with disabilities, maternity wear, clothing for children and the elderly, protective clothing for dangerous conditions and climatic extremes, purpose-designed clothing for sports, leisure, and entertainment industries).
22.02	Plan and implement a fashion design project based on a specific human or environmental factor.
23.0	Create an original pattern for a garment. The student will be able to:
23.01	Plan and report on a fashion design project using established criteria.
23.02	Using appropriate software, insert body measurements to produce a pattern.
23.03	(Optional) Draft and produce a paper pattern using personal measurements.
23.04	(Optional) Create slopers for a bodice, skirt, and pants; construct the slopers using grey goods and create a mood board that includes a title, photographs of the sloper, and the purpose/use of a sloper (include in Professional Portfolio).
23.05	Create a muslin prototype of the pattern.
23.06	Evaluate the prototype for proper fit and adjust as needed.
23.07	Construct a specialty garment according to teacher instructions (the project must include a minimum number of construction skills as designated by the teacher).
24.0	Demonstrate alteration skills on a sample or garment. The student will be able to:
24.01	Remove stitches in ready-made garments without damaging fabric.
24.02	Mark and even a hemline.
24.03	Lengthen and shorten hems in pants, skirts, or dresses (include cuffs and the use of hem tape).
24.04	Remove the flare from pant legs.
24.05	Taper a skirt.
24.06	Shorten the crotch rise in a garment/sample.

CTE Standards and Benchmarks

24.07	Take in the waist on a man's garment/sample.
24.08	Take in the waist on a woman's garment/sample.
24.09	Take in the side seams on a blouse/shirt.
24.10	Shorten sleeves at the cuff on a garment/sample.
24.11	Shorten sleeves at the shoulder cap on a garment/sample.
24.12	Finish seams and press altered areas using pressing techniques.
25.0	Demonstrate clothing repair on a garment or sample. The student will be able to:
25.01	Reinforce seams and buttonholes on a garment/sample.
25.02	Replace zippers in various types of garments/samples (including fly/jeans).
25.03	Apply patches to a garment/sample.
25.04	Replace various types of buttons on a garment/sample.
25.05	Demonstrate appropriate pressing techniques on repaired garments/samples.

**Florida Department of Education
Student Performance Standards**

Course Title: Fashion Design Specialist
Course Number: 8506430
Course Credit: 1

Course Description:

This course is designed to further develop competencies in the area of Fashion Technology and Design Services. **This course focuses on six specialty areas of Fashion Technology and Design Services: Window Display, Fashion Design Assistant, Tailor's Assistant, Personal Shopper, and Stylist. Students will select one of these specialty areas and will be expected to follow the performance standards for that area.** Also included is an opportunity for job shadowing. Students will be expected to finalize and submit a portfolio.

CTE Standards and Benchmarks	
26.0	Identify and describe the different specialties related to Fashion Technology and Design Services (e.g., Window Display, Fashion Design Assistant, Tailor's Assistant, Personal Shopper, and Stylist). The student will be able to:
26.01	Identify future trends in Fashion Technology and Design Services.
26.02	Research, identify, and describe the different job responsibilities of a Window Displayer, Fashion Design Assistant, Tailor's Assistant, Personal Shopper, and Stylist.
26.03	Identify, research, and describe current trends related to careers in the Fashion Technology and Design Services industry (e.g., blogger, museum curator, entertainment).
27.0	Select one specialty area and complete the student performance standards for that area. The student will be able to:
Window Display	
27.01	Demonstrate knowledge of the elements of design (e.g., color, line, proportion, scale, harmony, light).
27.02	Demonstrate an understanding of fashion as a form of ethno-cultural expression.
27.03	Demonstrate space planning in a window display according to given criteria.
27.04	Develop window displays in accordance with seasonal promotions.
27.05	Plan and create a window display project given established criteria.
Fashion Design Assistant	
27.06	Demonstrate knowledge of pattern making.

CTE Standards and Benchmarks

27.07 Apply design draping techniques.

27.08 Exhibit effective communication skills.

27.09 Demonstrate computer skills.

27.10 Demonstrate garment construction skills.

27.11 Explain the elements of design.

27.12 Demonstrate appropriate customer relations skills.

27.13 Plan and develop a project related to fashion design according to the specifications given by the designer.

Tailor's Assistant

27.14 Select suitable fabric for a tailored jacket using identified criteria.

27.15 Select suitable hair canvas, interfacing, linings, and underlining for specified fabric.

27.16 Prepare fabrics and alter patterns according to pattern directions.

27.17 Lay out patterns, bias, plaid, or one-way prints using correct layout procedures.

27.18 Cut patterns, fabric, hair canvas, and linings according to given directions.

27.19 Tailor tack markings using the proper techniques.

27.20 Baste and fit a garment.

27.21 Stitch seams using the correct stitches for the fabric.

27.22 Apply seam finishes selected from practice samples.

27.23 Apply zippers according to the manufacturer's instructions and the application chosen for different types of garments.

27.24 Construct tailored pockets.

27.25 Construct buttonholes.

27.26 Construct chest pieces, shoulder pads, and sleeve heads.

27.27 Set in sleeves according to given directions.

CTE Standards and Benchmarks

27.28 Construct and apply an upper collar and facings.

27.29 Construct and apply linings according to fabric requirements.

27.30 Construct hems using proper techniques for the selected fabric/garment style.

27.31 Select patterns and cut fabric for tailored pants.

27.32 Alter patterns and cut fabric for tailored pants.

27.33 Fit and construct tailored pants.

27.34 Construct and apply linings to tailored pants using appropriate techniques.

27.35 Refit and alter a ready-to-wear garment.

Costume Design

27.36 Demonstrate taking body measurements using the correct measuring method.

27.37 Compare and alter basic patterns.

27.38 Construct a basic muslin shell using a customer's measurements and/or a pattern.

27.39 Transfer fitting changes to paper patterns.

27.40 Construct an oak tag board sloper from muslin.

27.41 Draft a pattern according to costume specifications.

27.42 Identify and describe the styles that suit different body types.

27.43 Identify and design garments to suit different body types.

27.44 Choose fabric for a specific body type and design based on customer criteria.

27.45 Design garments for dance, theater, sports activities, costumes, music videos, and print ads.

27.46 Define draping; demonstrate the draping method of design.

Personal Shopper

27.47 Demonstrate effective communication skills.

CTE Standards and Benchmarks

27.48 Identify different body types.

27.49 Identify and demonstrate knowledge of appropriate attire for various ages, body types, and occasions.

27.50 Demonstrate an understanding of the relationship between color and skin tone.

27.51 Demonstrate the ability to work within a customer's budget.

27.52 Coordinate wardrobe essentials.

27.53 Plan and develop a personal shopping project according to established criteria.

27.54 Exhibit the skills necessary for a quality presentation of selections to clients.

27.55 Identify future trends in personal shopping.

Stylist

27.56 Demonstrate effective communication skills.

27.57 Identify different body types.

27.58 Identify and demonstrate knowledge of appropriate attire for various ages, body types, and occasions.

27.59 Demonstrate an understanding of the relationship between color and skin tone.

27.60 Demonstrate the ability to work within a customer's budget.

27.61 Identify future trends and future techniques in styling sets.

27.62 Identify and select fashion and accessories based on specific criteria.

27.63 Explain how the media has helped define fashion and influence design trends.

27.64 Coordinate wardrobe essentials.

27.65 Plan and develop a stylist project based on established criteria.

28.0 (Optional) Schedule and participate in a Fashion Technology and Design Services job shadowing experience. The student will be able to:

28.01 Research persons working in the Fashion Technology and Design Services profession within the local area.

28.02 Formalize, in writing, a job shadowing experience; apply knowledge gained within the program and use the guidelines set by the district, instructor, and employer; use knowledge synthesized within the program.

CTE Standards and Benchmarks

29.0 Finalize a professional portfolio according to industry standards. The student will be able to:

29.01 Submit a portfolio; include work samples from the Fashion Technology and Design Services program.

29.02 Compile and present a Mastery Project Showcase; include the professional portfolio, the technical sewing samples binder, examples of coursework, evidence of awards/honors, evidence of participation in FCCLA (if applicable), samples of constructed garments and slopers and the use of technology.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

Florida Family, Career and Community Leaders of America (FCCLA) is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Program Title: Interior Design Services
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8506500
CIP Number	0450040803
Grade Level	9-12
Program Length	4 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	FCCLA
SOC Codes (all applicable)	27-1029 – Designers, All Other 41-2031 – Retail Salespersons
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment or continued study in the Interior Design/Decorating industry.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and the relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency; includes competency-based applied learning that contributes to academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, broad transferable skills and the knowledge and demonstration of the following aspects of the residential design and decoration industry: planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues, and health, safety, and environmental issues.

Program Structure

This program is a planned sequence of instruction consisting of four (4) courses.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8506405	Design Services Core	APPRL MFG ϕ 7 @7 G FAM CON SC 1 FASH TECH 7G HME EC OCC ϕ 7 INT DES 7G TAILORING ϕ 7 TEC ED 1@2 ENG&TEC ED1@2	1 credit	41-2031	2	CT
8506540	Principles of Interior Design Services		1 credit	27-1029	2	CT
8506550	Interior Design Techniques		1 credit	27-1029	2	CT
8506560	Interior Design Specialist		1 credit	27-1029	3	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate leadership and organizational skills.
- 02.0 Demonstrate appropriate basic skills essential to working in design occupations.
- 03.0 Identify and exhibit employment skills.
- 04.0 Describe the relationship between human factors and design services.
- 05.0 Identify the characteristics and care of textiles.
- 06.0 Select and safely use tools and equipment.
- 07.0 Operate and maintain a conventional and/or commercial/industrial sewing machine.
- 08.0 Select and prepare materials.
- 09.0 Construct a machine-sewn design project for inclusion in a design portfolio.
- 10.0 Develop a design portfolio.
- 11.0 Demonstrate the basic skills essential to working in interior design services occupations.
- 12.0 Identify employment opportunities in interior design services.
- 13.0 Identify and exhibit the employment skills required for occupations related to interior design services.
- 14.0 Demonstrate an understanding of the elements and principles of design.
- 15.0 Demonstrate sales techniques in interior design services.
- 16.0 Demonstrate an understanding of entrepreneurship.
- 17.0 Identify and describe components of the design process.
- 18.0 Research the effects of history and culture on interior design.
- 19.0 Demonstrate sketching and freehand drawing skills.
- 20.0 Demonstrate the ability to use interior design services software.
- 21.0 Explain how human, environmental, and ergonomic factors impact design solutions.
- 22.0 Demonstrate knowledge of rendering techniques for presentations.
- 23.0 Plan and develop a design project.
- 24.0 Identify and describe the different specialties related to interior design services.
- 25.0 Plan and develop a complete interior design project in the specialty area selected.
- 26.0 (Optional) Schedule and participate in an interior design services job shadowing experience.
- 27.0 Finalize a portfolio according to industry standards.

**Florida Department of Education
Student Performance Standards**

Course Title: Design Services Core
Course Number: 8506405
Course Credit: 1

Course Description:

This course is designed to develop competencies in areas of the interior design industry or fashion technology and design industry. This course includes essential basic skills for working in Interior Design Services, leadership and organizational skills, basic principles of design, textile characteristics and care, employability skills, the relationship between human factors and interior design, the safe use of tools and equipment, and the selection of appropriate materials.

CTE Standards and Benchmarks	
01.0	Demonstrate leadership and organizational skills. The student will be able to:
01.01	Demonstrate cooperation as a group member to achieve team goals.
01.02	Demonstrate confidence in leadership roles and organizational responsibilities.
02.0	Demonstrate appropriate basic skills essential to working in design services occupations. The student will be able to:
02.01	Identify the knowledge, skills, and attitudes necessary to perform occupational tasks (e.g., email, phone, conversations with clients).
02.02	Demonstrate the communication competencies required to perform occupational tasks.
03.0	Identify and exhibit employment skills. The student will be able to:
03.01	Use the Internet to conduct a job search.
03.02	Research and synthesize information about an industry-related employment opportunity or advanced training opportunities; include information pertaining to local post-secondary educational programs and training opportunities.
03.03	Demonstrate proficiency in current technology and software related to the fashion design industry; create, revise, retrieve and verify information.
03.04	Apply the principles of time management, work simplification, and teamwork when performing assigned tasks.
03.05	Demonstrate pride in the quality of work performed.
04.0	Describe the relationship between human factors and design services. The student will be able to:

CTE Standards and Benchmarks

04.01	Define the <i>elements</i> of design applicable to interior design (space, line, shape, form, texture, color).
04.02	Define the <i>principles</i> of design applicable to design (proportion, scale, balance, emphasis, rhythm, harmony).
04.03	Explain the impact of human factors (psychological, physiological, and social) on decisions relating to design services processes.
04.04	Identify and describe the modifications necessary to accommodate individuals with special needs.
04.05	Identify and describe the impact of human needs and wants on the cost of design services and customized projects.
04.06	Identify and describe the importance of barrier-free design and accessibility related to design services.
04.07	Identify and describe the characteristics of interior spaces, furnishings, and garments.
04.08	Take accurate measurements to determine the correct size home furnishings items.
05.0	Identify the characteristics and care of textiles. The student will be able to:
05.01	Identify and describe fiber characteristics.
05.02	Identify and describe types of fabric construction (e.g., knitted, woven, tufted).
05.03	Identify and describe types of fabric finishes (e.g., dyed, printed, performance/quality enhancements).
05.04	Identify and describe different types of natural and manufactured textiles; identify the pros/cons, uses, and care of each type.
05.05	Identify the laws and regulations governing the textile industry; including labeling laws and care symbols.
06.0	Select and safely use tools and equipment. The student will be able to:
06.01	Identify the tools and equipment used in design services for sewing, cutting, measuring, fabric marking, and drafting.
06.02	Select the appropriate tools and equipment for assigned projects; explain why the selection is appropriate for the project.
06.03	Demonstrate proper and safe usage of tools and equipment.
06.04	Explain the importance of observing Occupational Safety and Health Administration (OSHA) rules and regulations.
06.05	Keep an inventory record of tools, equipment, supplies, and materials using computer application software or other formatting options (e.g., written records).
06.06	Research innovations in materials and technologies that contribute to safeguards in the tools and equipment used in interior design services.

CTE Standards and Benchmarks	
06.07	Identify and apply drafting tools and techniques to a specific design services project (e.g., architectural ruler, light box, protractor, floor plans to scale, one-point perspective).
07.0	Operate and maintain a conventional and/or commercial/industrial sewing machine. The student will be able to:
07.01	Identify the parts of a sewing machine and demonstrate proper maintenance according to the manufacturer's instructions.
07.02	Select the needles that appropriate for different fabric types; identify the process and demonstrate needle insertion.
07.03	Identify the steps and demonstrate threading a sewing machine.
07.04	Diagram and demonstrate the ability to wind the bobbin, thread the bobbin case, and insert the bobbin correctly into a sewing machine.
07.05	Demonstrate straight stitching.
07.06	Identify and demonstrate stitch length and width selection.
08.0	Select and prepare materials. The student will be able to:
08.01	Identify and match pattern pieces.
08.02	Read and interpret instructions and specifications.
08.03	Identify fabric content.
08.04	Prepare fabric.
08.05	Adjust patterns according to pattern/teacher instructions.
08.06	Lay out, pin, cut, and mark fabric according to a pattern or teacher instructions.
08.07	Match grain lines and patterns according to a pattern or teacher instructions.
08.08	Mark fabric for assembly according to a pattern or teacher instructions.
08.09	Match thread with fabric.
08.10	Identify, select, and use content labels according to fabric requirements.
09.0	Construct a machine-sewn design project for inclusion in a design portfolio. The student will be able to:
09.01	Construct projects that include seaming, darts, interfacing, seam finishing, hemming, closures and pockets.

CTE Standards and Benchmarks

09.02 Line up notches, dots, or clips according to a pattern or teacher instructions.

09.03 Demonstrate hemming techniques (e.g., slip stitch, blind hem stitch).

10.0 Develop a design portfolio. The student will be able to:

10.01 Assemble a portfolio; include all work samples.

**Florida Department of Education
Student Performance Standards**

Course Title: Principles of Interior Design Services
Course Number: 8506540
Course Credit: 1

Course Description:

This course is designed to further develop competencies in interior design services. This course includes the exploration of employment opportunities in interior design services, the basic skills essential to working in this industry, employability skills, the elements and principles of design, sales techniques, and an understanding of entrepreneurship.

CTE Standards and Benchmarks	
11.0	Demonstrate the basic skills essential to working in interior design services occupations. The student will be able to:
11.01	Identify the mathematics knowledge, skills, and attitudes necessary to perform occupational tasks.
11.02	Identify the scientific knowledge, skills, and attitudes necessary to perform occupational tasks.
11.03	Demonstrate math competencies necessary to perform occupational tasks.
11.04	Demonstrate scientific competencies necessary to perform occupational tasks.
11.05	Distinguish between mass production versus individual-specific design needs.
12.0	Identify employment opportunities in Interior Design Services. The student will be able to:
12.01	Identify occupations in interior design services (e.g., interior designer, interior decorator, architect, architectural drafter, architectural illustrator, model maker).
12.02	Identify personal skills and interests that relate to careers in interior design.
12.03	Identify the levels of training, degrees, and/or certifications required for occupations in interior design.
12.04	Identify the duties and responsibilities associated with occupations in interior design.
12.05	Identify ways to achieve career advancement in interior design occupations.
12.06	Identify career options in interior design (e.g., entrepreneurship, apprenticeship).
12.07	Analyze current trends as they relate to the future of occupations in interior design.

CTE Standards and Benchmarks

12.08	Identify earning and wage level options (entry level, mid-level, and professional) for occupations in interior design.
13.0	Identify and exhibit the employment skills required for occupations related to interior design services. The student will be able to:
13.01	Identify and list documents that may be required to apply for a job (e.g., résumé, cover letter or letter of interest, portfolio).
13.02	Accurately complete a job application form.
13.03	Use role playing techniques to demonstrate competence in job interview procedures.
13.04	Identify and demonstrate appropriate responses to criticism from an employer, supervisor, co-worker, and/or client/customer.
13.05	Identify and demonstrate acceptable work habits, including a positive attitude.
13.06	Demonstrate knowledge of how to make job changes appropriately.
13.07	Identify and describe acceptable employee health and hygiene habits.
13.08	Demonstrate customer relations skills by synthesizing given instructions.
13.09	Develop and create a résumé and portfolio following a specified format.
14.0	Demonstrate an understanding of the elements and principles of design. The student will be able to:
14.01	Identify the elements of design (e.g., texture, pattern, line, form and shape, space, color, light) and explain how various effects can be achieved; present information in a written report, oral report, or demonstration.
14.02	Identify the principles of design (e.g., proportion, scale, balance, rhythm, emphasis, and harmony) and explain how they can be used effectively in interior design; present information in a written report, oral report, or demonstration.
14.03	Apply the elements and principles of design to an interior design project.
14.04	Develop a plan to apply color and color schemes to an interior design project.
14.05	Use the principles and elements of design to evaluate the merits of a design.
15.0	Demonstrate sales techniques in Interior Design Services. The student will be able to:
15.01	Identify, ask, and answer questions coherently and concisely.
15.02	Read and follow written instructions; listen to and follow oral instructions.
15.03	Give sales presentations orally and in writing.

CTE Standards and Benchmarks

15.04	Find information on sales products and services (e.g., associated costs, time of arrival for products, completion time of services, contracts, warranties, and return policies).
15.05	Research and recommend products that meet the customer's needs and specifications.
15.06	Demonstrate appropriate computer and telecommunications skills.
15.07	Recognize the importance of a sense of responsibility and ethical behavior in the Interior Design Services industry.
16.0	Demonstrate an understanding of entrepreneurship. The student will be able to:
16.01	Define entrepreneurship.
16.02	Compare the advantages and disadvantages of business ownership in a written report or a presentation.
16.03	Identify and describe the characteristics and responsibilities of an entrepreneur.
17.0	Identify and describe components of the design process. The student will be able to:
17.01	Recognize the steps in the design process.
17.02	Develop a flow chart that illustrates the steps in the design process (e.g., determine the need, brainstorm, design the brief, research, plan, fabricate, and evaluate).
17.03	Prepare and present a demonstration of the design process.

**Florida Department of Education
Student Performance Standards**

Course Title: Interior Design Techniques
Course Number: 8506550
Course Credit: 1

Course Description:

This course is designed to further develop competencies in Interior Design Services. This course includes components of the design process, the effects of history and culture on design, sketching and freehand drawing, factors that impact design (human, environmental, ergonomic), rendering techniques, and the development of a design project.

CTE Standards and Benchmarks

18.0 Research the effects of history and culture on interior design. The student will be able to:

18.01 Identify design periods from 1900 to the present (e.g., Art Nouveau, Art Deco, Contemporary, Traditional, and Industrial).

18.02 Explain the influence of earlier design periods on contemporary design.

18.03 Describe the elements and principles of design as they relate to a particular time period/culture.

18.04 Select a design period and create a multimedia presentation.

19.0 Demonstrate sketching and freehand drawing skills. The student will be able to:

19.01 Demonstrate sketching and shading techniques.

19.02 Create mats or frames for the display of sketches and drawings.

19.03 Select and develop a design project using sketching and shading techniques to include in a portfolio.

20.0 Demonstrate the ability to use Interior Design Services software. The student will be able to:

20.01 Research and list software applications typically used in the interior design industry.

20.02 Identify and discuss the benefits of using software in the workplace.

20.03 Read and interpret a blueprint.

20.04 Evaluate floor plans for the purpose of interior décor and design.

CTE Standards and Benchmarks

	20.05 Illustrate size and scale in a drawing.
21.0	Explain how human, environmental, and ergonomic factors impact design solutions. The student will be able to:
21.01	List human factors that could impact a design (e.g., location, climate, availability, cost, personal taste/style, and lifestyle).
21.02	Demonstrate knowledge of how the dimensions of the human body affect the outcome of a specific design project.
21.03	Plan and implement a design project by focusing on a specific human, environmental or ergonomic factor.
21.04	Examine the positive and negative effect a design concept has had on the environment.
22.0	Demonstrate knowledge of rendering techniques for presentations. The student will be able to:
22.01	Given established criteria, apply all learned rendering skills to create a high quality presentation (e.g., presentation board, model, slideshow).
23.0	Plan and develop a design project. The student will be able to:
23.01	Use established criteria to plan and report on a design project.
23.02	Calculate the measurements for a design project (e.g., area, size, and circumference).
23.03	Use drafting techniques to develop a design project.

**Florida Department of Education
Student Performance Standards**

Course Title: Interior Design Specialist
Course Number: 8506560
Course Credit: 1

Course Description:

This course is designed to further develop competencies in interior design. This course focuses on four specialty areas: kitchen and bath planning; floor, wall, and window treatments; furniture, lighting and accessories; and audiovisual and security systems. Students will select on one of those specialty areas and follow the performance standards for that area. Students will develop a design project and finalize and submit a portfolio.

CTE Standards and Benchmarks	
24.0	Identify and describe the different specialties related to interior design services. The student will be able to:
24.01	Identify future trends in interior décor and design.
24.02	Research, identify and describe the different job responsibilities of a kitchen and bath planner, a floor covering/window and wall treatment consultant, a furniture, lighting and accessory specialist, and an audiovisual and security system specialist.
Select one specialty area (listed below) and complete the student performance standards for that area:	
Kitchen and Bath	
24.03	Identify the principles and elements of kitchen and bath design.
24.04	Identify space-planning criteria used in kitchen and bath design.
24.05	Identify safety guidelines for the materials used in kitchen and bath design.
24.06	Analyze the fixtures, equipment, appliances, carpentry, cabinets, surfaces, finished materials, and mechanical and electrical systems used in kitchen and bath designs.
24.07	Research new trends in kitchen and bath design.
24.08	Demonstrate knowledge of kitchen and bath design relative to the total residential floor plan.
Floor, Window, and Wall Treatments	
24.09	Identify and describe the characteristics of different types of floor coverings (e.g., wood, ceramic tile, concrete/masonry, carpet).
24.10	List and compare the durability and maintenance factors for floor covering materials.

CTE Standards and Benchmarks

24.11	Develop criteria for the selection of floor coverings; include considerations of color, texture, type, style, pattern, client's lifestyle, energy conservation, and environmental safety.
24.12	Measure and calculate space and materials for a floor covering application based on the client's specifications.
24.13	Identify and describe the characteristics of different types of wall treatments.
24.14	Compare durability and maintenance factors for wall treatment materials.
24.15	Develop criteria for the selection of wall treatments; include considerations of color, texture, type, and style, pattern, client's lifestyle, energy conservation, and environmental safety.
24.16	Identify and describe different types and functions of windows and window treatments.
24.17	Categorize window treatments as drapery or non-drapery.
24.18	Identify and describe the characteristics of non-drapery window treatments.
24.19	Identify and describe the characteristics of fabrics used for window treatments.
24.20	Describe the characteristics of draperies and drapery headings.
24.21	Recognize different types and uses of hardware for window treatments.
24.22	Identify and describe different window treatment styles.
24.23	Compare durability and maintenance factors for window treatment materials.
24.24	Develop criteria for the selection of window treatments; include considerations of color, texture, type, style, pattern, client's lifestyle, energy conservation, and environmental safety.
24.25	Demonstrate knowledge of floor, window, and wall treatments as they relate to the total residential floor plan.

Furniture, Lighting and Accessories

24.26	Identify and describe the historical characteristics of furniture styles.
24.27	Identify and describe the various methods of furniture construction.
24.28	Compare and contrast types of wood and illustrate comparisons in an informal presentation, written report, or computerized presentation.
24.29	Describe different types of wood finishes and the care required for each type.
24.30	Compare and contrast the synthetic fibers and materials (e.g., nylon, polyester, rayon, plastic) and the natural fibers and materials (e.g., cotton, paper, silk, wool, wood) used in furniture construction.

CTE Standards and Benchmarks

24.31	Identify and describe the appropriate accessories for a specific setting (e.g., home, office, function).
24.32	Demonstrate groupings and the placement of furniture, lighting and accessories.
24.33	Identify and describe different types of lighting fixtures and lightbulbs.
24.34	Select and identify appropriate lighting for specific spaces; include general, task, and ambiance lighting; consider lifestyles and energy conservation specifications.
24.35	Demonstrate knowledge of furniture, lighting, and accessories relative to the total residential floor plan.
25.0	Plan and develop a complete interior design project in the specialty area selected. The student will be able to:
25.01	Read and interpret a blueprint for a specified interior design project.
25.02	Plan and write a design project for a specified client profile; apply the elements and principles of design.
25.03	Calculate measurements for the design project (e.g., area, size, and circumference).
25.04	Select the appropriate materials and products for the project.
25.05	Measure and calculate the materials needed for a client-specified project.
25.06	Estimate the number of products needed for the client's project.
25.07	Determine the client's budgetary limitations.
25.08	Estimate the cost required to implement the plan; evaluate the estimate in relation to the client's budget.
25.09	Create a presentation board and make an oral presentation to the client.
26.0	(Optional) Schedule and participate in interior design services job shadowing experience. The student will be able to:
26.01	Research persons working in the interior design services profession within the local area.
26.02	Synthesize and apply knowledge gained throughout the course of the program to write a formal report about the job shadowing experience.
27.0	Finalize a portfolio according to industry standards. The student will be able to:
27.01	Submit a professional portfolio; include all coursework samples from the program.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

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Career and Technical Student Organization (CTSO)

Florida Family, Career and Community Leaders of America (FCCLA) is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Program Title: Commercial Art Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8718000
CIP Number	0650040206
Grade Level	9-12
Program Length	10 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	SkillsUSA
SOC Codes (all applicable)	27-1014 -- Multimedia Artists and Animators 27-1029 -- Designers All Others 27-1024 -- Graphic Designers
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment as artists and related workers, illustrators, and commercial designers.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and the relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, basic art skills, lettering skills, preparation of layouts and illustrations, preparation of camera ready paste-up, and development of specialized skills.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of ten (10) credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8718010	Commercial Art Technology 1	COMM ART @7 7G GRAPHIC COMM 7G	1 credit	27-1024	2	CT
8718020	Commercial Art Technology 2		1 credit	27-1024	2	CT
8718030	Commercial Art Technology 3		1 credit	27-1024	2	CT
8718040	Commercial Art Technology 4		1 credit	27-1029	2	CT
8718050	Commercial Art Technology 5		1 credit	27-1029	2	CT
8718060	Commercial Art Technology 6		1 credit	27-1029	2	CT
8718070	Commercial Art Technology 7		1 credit	27-1014	2	CT
8718080	Commercial Art Technology 8		1 credit	27-1014	2	CT
8718090	Commercial Art Technology 9		1 credit	27-1024	3	CT
8718091	Commercial Art Technology 10		1 credit	27-1024	3	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate proficiency in the elements and principles of design.
- 02.0 Demonstrate proficiency in art and design skills.
- 03.0 Demonstrate an understanding of type design.
- 04.0 Demonstrate proficiency in layout.
- 05.0 Demonstrate proficiency in applied design.
- 06.0 Demonstrate proficiency in graphic art computer skills.
- 07.0 Demonstrate proficiency in graphic production.
- 08.0 Demonstrate an understanding of employability in commercial art and graphic media.
- 09.0 Demonstrate an understanding of entrepreneurship.
- 10.0 Demonstrate proficiency in website planning and the design process.
- 11.0 Develop markup language structures.
- 12.0 Create basic webpages.
- 13.0 Incorporate images and graphical formatting on a webpage.
- 14.0 Incorporate form structures on a webpage.
- 15.0 Describe frame structures and the usage of these structures.
- 16.0 Use Cascading Style Sheets (CSS).
- 17.0 Examine web design technologies and techniques.
- 18.0 Describe the process for publishing a website.
- 19.0 Describe how website performance is monitored and analyzed.
- 20.0 Create an informational website.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Art Technology 1
Course Number: 8718010
Course Credit: 1

Course Description:

This course is designed to provide instruction in the elements and principles of design.

CTE Standards and Benchmarks

01.0	Demonstrate proficiency in the elements and principles of design. The student will be able to:
01.01	Explain proper use and care of tools and equipment.
01.02	Discuss the legal and ethical issues related to graphic design.
01.03	Apply the principles and elements of design.
01.04	Demonstrate a basic understanding of vector drawing programs.
01.05	Demonstrate a basic understanding of photo-editing/photo-manipulation programs.
01.06	Apply color theory (pigment versus light).
01.07	Utilize tones, hues, and values.
01.08	Sketch designs using pencil and ink.
01.09	Mix and apply colors to produce desired hues, tints, and shades.
01.10	Apply color for impact (color psychology) and demonstrate an understanding of color theory.
01.11	Differentiate between line, halftone, duotone, spot, RGB, four-color process, and web-safe colors.
01.12	Demonstrate 2-D design capabilities.
01.13	Demonstrate designs with symmetry and asymmetry.
01.14	Develop grids for traditional and digital layouts for print and web media.

CTE Standards and Benchmarks

01.15	Create freehand designs and objects for visualization and presentation.
01.16	Demonstrate harmony and contrast of line and shape.
01.17	Demonstrate harmony and contrast of color and tone.
01.18	Demonstrate harmony and contrast of proportion.
01.19	Demonstrate harmony and contrast of texture pattern.
01.20	Demonstrate harmony and contrast of motion.
01.21	Indicate style of layout design appropriate to the target audience.
01.22	Make a collage.
01.23	Begin developing a professional portfolio (to be updated as the student progresses through the program).
01.24	(Optional) Create a sign on poster board.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Art Technology 2
Course Number: 8718020
Course Credit: 1

Course Description:

This course is designed to provide instruction in art and design skills.

CTE Standards and Benchmarks	
02.0	Demonstrate proficiency in art and design skills. The student will be able to:
02.01	Explain proper use and care of tools.
02.02	Make computations for centering, spacing, and scaling drawings.
02.03	Draw on various types of media.
02.04	Illustrate using ink, pencil, washes, markers, tempera, watercolor, and paints.
02.05	Demonstrate renderings of different textures using the above listed media.
02.06	Make illustrations using various objects.
02.07	Make a montage illustration.
02.08	Draw a cartoon.
02.09	Interpret information from drawings, prints, and sketches.
02.10	Draw freehand sketches.
02.11	Draw a one-point perspective and a two-point perspective.
02.12	Make corrections to a drawing.
02.13	Develop a glossary of technical terms.
02.14	Analyze an object to determine size, shape, and proportion.

CTE Standards and Benchmarks

02.15 Draw an oblique drawing.

02.16 Draw an isometric drawing.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Art Technology 3
Course Number: 8718030
Course Credit: 1

Course Description:

This course is designed to provide instruction in type design.

CTE Standards and Benchmarks

03.0 Demonstrate an understanding of type design. The student will be able to:

03.01 Define typographic terms (e.g., leading, kerning).

03.02 Identify and select typographic applications.

03.03 Demonstrate the ability to proofread, to use proofreader's marks, and to run a spell check.

03.04 Explain picas, points, and conversion to inches.

03.05 Explain specification of type and copy fitting.

03.06 Identify and select typographic styles.

03.07 Define basic letter structures.

03.08 Demonstrate mixing of families of type.

03.09 Identify and select lettering styles.

03.10 Determine and select lettering styles for layout sketches.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Art Technology 4
Course Number: 8718040
Course Credit: 1

Course Description:

This course is designed to provide instruction in layout.

CTE Standards and Benchmarks

04.0	Demonstrate proficiency in layout. The student will be able to:
04.01	Identify the parts of a layout.
04.02	Create thumbnail sketches.
04.03	Create roughs and comprehensives from thumbnail sketches.
04.04	Prepare computer roughs from pencil layouts.
04.05	Prepare digital-ready artwork from comprehensives; prepare files that are print-ready and presentation-ready.
04.06	Crop and scale artwork and/or photos for layouts.
04.07	Use adhesives.
04.08	Demonstrate the use of effects or styles.
04.09	Explain layout and color trends.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Art Technology 5
Course Number: 8718050
Course Credit: 1

Course Description:

This course is designed to provide instruction in applied design techniques.

CTE Standards and Benchmarks

05.0	Demonstrate proficiency in applied design. The student will be able to:
05.01	Locate and identify resource materials for inspiration; develop a file or idea bank.
05.02	Design logos.
05.03	Design stationery layouts.
05.04	Design a magazine, book cover, album artwork, and CD cover.
05.05	Design an ad campaign that includes newspapers, magazines, billboards, and television; demonstrate continuity.
05.06	Design a greeting card.
05.07	Design a business card.
05.08	Apply advertising psychology.
05.09	Produce an industrial brochure and/or consumer brochure.
05.10	Design a consumer brochure.
05.11	Construct a package design.
05.12	Produce computer-assisted artwork.
05.13	Continue developing a professional portfolio.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Art Technology 6
Course Number: 8718060
Course Credit: 1

Course Description:

This course is designed to provide instruction in graphic art computer skills.

CTE Standards and Benchmarks

06.0	Demonstrate proficiency in graphic art computer skills. The student will be able to:
06.01	Demonstrate graphic art computer skills using appropriate graphic art programs and hardware.
06.02	Use software and hardware to manipulate and adjust various drawings, photos, and graphic material by computer.
06.03	Produce finished computer projects that reflect current and/or emergent trends in graphic art technology.
06.04	Operate various input devices for computer graphics, such as scanners and cameras.
06.05	Demonstrate proficiency in vector and raster programs.
06.06	(Optional) Make an orthographic drawing using digital software.
06.07	Continue developing a professional portfolio.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Art Technology 7
Course Number: 8718070
Course Credit: 1

Course Description:

This course is designed to provide instruction in graphic production and employability skills.

CTE Standards and Benchmarks

07.0 Demonstrate proficiency in graphic production. The student will be able to:

07.01 Define the differences in production processes and estimate relative costs.

07.02 Recognize the limitations for printing and dissemination on the Internet.

07.03 Identify and select different printing surfaces (e.g., embossing/debossing, silk lamination, varnish, foil, thermography, die cut, letterpress, and silkscreen).

07.04 Identify and select appropriate printing inks.

07.05 Identify and select finishing processes.

07.06 Identify standard industry material sizes.

07.07 Specify types of folds.

07.08 Make a print on a plotter.

07.09 Demonstrate proficiency in preparing files for output via print media and web content (preflight).

08.0 Demonstrate an understanding of employability in commercial art and graphic media. The student will be able to:

08.01 Identify and create a résumé, references, cover letter, and a thank you letter.

08.02 Relay instructions to others orally and in writing.

08.03 Define and explain graphic design terms.

08.04 Identify common industry questions.

CTE Standards and Benchmarks

08.05 Make project presentations.

08.06 Explain appropriate interactions with an employer, fellow employees, and customers.

08.07 Identify potential career pathways.

08.08 Understand the importance of networking with other people in the profession.

08.09 Conduct a job search.

08.10 Develop a professional digital portfolio.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Art Technology 8
Course Number: 8718080
Course Credit: 1

Course Description:

This course is designed to provide instruction in graphic art computer skills and airbrush skills for the illustrator.

CTE Standards and Benchmarks	
09.0	Demonstrate an understanding of entrepreneurship. The student will be able to:
09.01	Define entrepreneurship.
09.02	Describe the importance of entrepreneurship to the American economy.
09.03	List the advantages and disadvantages of business ownership.
09.04	Identify the risks involved in ownership of a business.
09.05	Identify the necessary personal characteristics of a successful entrepreneur.
09.06	Identify the business skills needed to operate a small business efficiently and effectively.
09.07	Create a business plan.
10.0	Demonstrate proficiency in website planning and the design process. The student will be able to:
10.01	Discuss the importance of information architecture to web design and development.
10.02	Conduct a client interview to determine the purpose and needs of the business.
10.03	Conduct a competitive analysis of similar industry sites.
10.04	Identify stages in the web design process and describe the activities comprising each stage.
10.05	Define the site structure by creating a content map, storyboard, and associated wireframes.
10.06	Discuss the legal and ethical issues related to web design and web content.

CTE Standards and Benchmarks

10.07 Describe accessibility and its implications on web design.

10.08 Create a website mock-up for client approval.

10.09 Continue developing a professional traditional and digital portfolio.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Art Technology 9
Course Number: 8718090
Course Credit: 1

Course Description:

This course is designed to provide instruction in the development of markup language structures, the creation of basic webpages, and the incorporation of form structures in a webpage.

CTE Standards and Benchmarks	
11.0	Develop markup language structures. The student will be able to:
11.01	Define common markup languages and understand the usage of these languages.
11.02	Identify common devices.
11.03	Determine device and browser support and the appropriate usage of markup languages (existing and emerging).
12.0	Create basic webpages. The student will be able to:
12.01	Create basic webpage structures using common markup elements and attributes.
12.02	Incorporate list structures in a webpage (ordered, unordered, definition, nested).
12.03	Incorporate link structures in a webpage (external, internal, email).
12.04	Research web color usage principles and incorporate in a webpage.
13.0	Incorporate images and graphical formatting on a webpage. The student will be able to:
13.01	Describe usage guidelines (e.g., format types, size, relevance) for integrating images and graphics into a webpage.
13.02	Compare and contrast standard image formats used in webpage design.
13.03	Incorporate graphics into a webpage design.
13.04	Create and incorporate image maps in a webpage.
13.05	Optimize images and graphics for use in a webpage.

CTE Standards and Benchmarks

13.06 Incorporate bootstrap layout.

14.0 Incorporate form structures in a webpage. The student will be able to:

14.01 Create an accessible form using common elements; include form, fieldset, legend, text area, select, option, button, and input (radio, checkbox, submit, reset, image, password, hidden).

14.02 Describe and diagram the relationship between XHTML forms and server-side technologies.

14.03 Compare and contrast the GET and POST methods for forms handling.

14.04 Define form validation and describe how it is accomplished.

14.05 List popular server-side technologies used to process content sent from XHTML forms.

14.06 Use labels with form elements.

14.07 Connect an XHTML form to a server-side script for processing.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Art Technology 10
Course Number: 8718091
Course Credit: 1

Course Description:

This course is designed to provide instruction in advanced webpage design.

CTE Standards and Benchmarks	
15.0	Describe frame structures and the usage of these structures. The student will be able to:
15.01	Explore frame and iframe structures and support issues.
15.02	Describe appropriate uses of iframes.
15.03	Incorporate frame structure in a webpage.
16.0	Use Cascading Style Sheets (CSS). The student will be able to:
16.01	Define CSS and describe its importance in web design.
16.02	Compare and contrast existing and emerging CSS versions.
16.03	Determine browser support and the appropriate usage of CSS (existing and emerging versions).
16.04	Explain “document flow” and describe its implications on web design.
16.05	Recognize and use element selectors, ID selectors, class selectors, pseudo-class selectors, and descendant selectors.
16.06	Explain how inheritance and specificity affect CSS rule conflicts.
16.07	Use inline styles, embedded style sheets, and external style sheets.
16.08	Use the link and import methods to connect to an external style sheet.
16.09	Use CSS shorthand techniques to create efficient and concise style sheets.
16.10	Apply basic CSS properties (background, border, clear color, float, font, height, line-height, list-style, margin, overflow, padding position, text-align, text-indent, width, z-index, padding).

CTE Standards and Benchmarks

16.11	Use CSS to style tables (e.g., borders, width, spacing, alignment, background).
16.12	Use CSS to enhance the appearance and usability of an XHTML form.
17.0	Examine web design technologies and techniques. The student will be able to:
17.01	Compare and contrast common authoring tools.
17.02	Compare and contrast client-side and server-side technologies.
17.03	Define e-commerce types and usages.
17.04	Describe database connectivity relative to websites.
17.05	Identify technologies to enhance user experiences.
18.0	Describe the process for publishing a website. The student will be able to:
18.01	Explore domain name selection principles.
18.02	Identify the process for registering a domain name.
18.03	Compare and contrast hosting providers, features, and selection criteria.
18.04	Describe the various means for uploading website files (e.g., FTP, web-based tools).
19.0	Describe how website performance is monitored and analyzed. The student will be able to:
19.01	Identify issues related to website maintenance.
19.02	Use webpage validation tools.
19.03	Describe website performance metrics (e.g., visits, time-on-page, time-on-site) and discuss the implication of performance metrics on design.
19.04	Demonstrate knowledge of accessibility problems and solutions.
19.05	Examine indexing, page ranking, and basic Search Engine Optimization (SEO) techniques.
19.06	Explore common website analytic tools.
20.0	Create an informational website. The student will be able to:
20.01	Use Content Management System (CMS) web authoring software to create a multipage informational website.

CTE Standards and Benchmarks

20.02 Use image-editing software to enhance website designs with simple graphics.

20.03 Use animation software to enhance website designs.

20.04 Enhance the website using client-side technologies (e.g., rollovers, plug-ins, pop-up windows).

20.05 Demonstrate efficient and consistent website development practices (e.g., the use of templates, snippets).

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Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

SkillsUSA is the CO-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Program Title: 3-D Animation Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8718100
CIP Number	0610030401
Grade Level	9-12
Program Length	7 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	SkillsUSA
SOC Codes (all applicable)	27-1014 -- Multimedia Artists and Animators
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment in the field of 3-D Animation and related career fields.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, practical experiences in 3-D Animation design and production. Specialized skills such as video editing, audio production, and the utilization of animation and authoring software are used to produce a variety of multimedia productions.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of seven (7) credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8718110	3-D Animation Technology 1	BUS ED 1 @ 2 COMM ART @7 7G COMPU SCI 6 ELECT DP @7 %G TEC ELEC \$7 G TV PRO TEC @7 7G	1 credit	27-1014	2	CT
8718120	3-D Animation Technology 2		1 credit	27-1014	2	CT
8718130	3-D Animation Technology 3		1 credit	27-1014	2	CT
8718140	3-D Animation Technology 4		1 credit	27-1014	2	CT
8718150	3-D Animation Technology 5		1 credit	27-1014	2	CT
8718160	3-D Animation Technology 6		1 credit	27-1014	2	CT
8718170	3-D Animation Technology 7		1 credit	27-1014	2	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Understand the history of 3-D Animation.
- 02.0 Understand the production process.
- 03.0 Understand intellectual property rights, copyright laws and plagiarism relative to creative assets.
- 04.0 Demonstrate proficiency in computer skills.
- 05.0 Demonstrate knowledge of photo editing software.
- 06.0 Demonstrate knowledge of production writing as it relates to 3-D animation.
- 07.0 Demonstrate knowledge of art direction.
- 08.0 Demonstrate knowledge of character development.
- 09.0 Demonstrate knowledge of storyboarding.
- 10.0 Demonstrate knowledge of animatics.
- 11.0 Demonstrate knowledge of video-editing software.
- 12.0 Demonstrate appropriate voice acting skills.
- 13.0 Demonstrate basic audio production.
- 14.0 Demonstrate knowledge of audio editing software.
- 15.0 Demonstrate knowledge of funding presentations and pitches.
- 16.0 Understand modeling in relation to the production process.
- 17.0 Demonstrate knowledge of animation principles as they relate to modeling.
- 18.0 Demonstrate knowledge of modeling principles.
- 19.0 Demonstrate knowledge of 3-D Animation software.
- 20.0 Demonstrate knowledge of 3-D Animation software navigation.
- 21.0 Demonstrate knowledge of NURBS modeling.
- 22.0 Demonstrate knowledge of polygonal modeling.
- 23.0 Demonstrate knowledge of basic lighting.
- 24.0 Demonstrate knowledge of basic materials and textures.
- 25.0 Demonstrate knowledge of basic animation.
- 26.0 Demonstrate knowledge of basic character setup.
- 27.0 Demonstrate knowledge of basic 3-D rendering.
- 28.0 Understand the role of a texture artist in relation to the production process.
- 29.0 Demonstrate knowledge of color theory.
- 30.0 Demonstrate knowledge of advanced material and texture creation.
- 31.0 Demonstrate knowledge of cloth and hair.
- 32.0 Demonstrate knowledge of cell-shading.
- 33.0 Demonstrate knowledge of texture baking.
- 34.0 Demonstrate knowledge of texture maps.
- 35.0 Demonstrate knowledge of 3-D painting software.
- 36.0 Demonstrate knowledge of rigging.

- 37.0 Demonstrate knowledge of morphing.
- 38.0 Demonstrate knowledge of facial animation.
- 39.0 Demonstrate knowledge of advanced rigging.
- 40.0 Demonstrate knowledge of motion capture systems.
- 41.0 Demonstrate knowledge of motion capture system setup.
- 42.0 Demonstrate knowledge of motion capture preproduction.
- 43.0 Understand the role of a 3-D animator in relation to the production process.
- 44.0 Demonstrate knowledge of advanced animation.
- 45.0 Demonstrate knowledge of motion graphics.
- 46.0 Demonstrate knowledge of animation behaviors and scripting.
- 47.0 Demonstrate knowledge of particle systems.
- 48.0 Demonstrate knowledge of advanced audio production.
- 49.0 Demonstrate knowledge of dynamics (physics).
- 50.0 Demonstrate knowledge of video compositing software.
- 51.0 Demonstrate knowledge of post-production.
- 52.0 Develop a professional portfolio of work.

**Florida Department of Education
Student Performance Standards**

Course Title: 3-D Animation Technology 1
Course Number: 8718110
Course Credit: 1

Course Description:

This course focuses on the history of 3-D animation, the production process, intellectual property rights, computer skills and animation development.

CTE Standards and Benchmarks

01.0 Understand the history of 3-D Animation. The student will be able to:

01.01 Understand the history of animation (e.g., 2D, cell, stop motion).

01.02 Understand the history of computer animation.

01.03 Identify the advantages and limitations of computer animation.

01.04 Identify industry and business uses of 3-D animation.

01.05 Identify 3-D assets and associated end products.

02.0 Understand the production process. The student will be able to:

02.01 Identify the job titles associated with animation production.

02.02 Identify the various tools and equipment used to produce 3-D animation.

02.03 Understand speed and efficiency concepts.

02.04 Understand a production pipeline.

02.05 Identify the departments of an animation studio.

02.06 Understand the interrelationships between departments.

02.07 Understand basic communication concepts (e.g., verbal, memos, paperwork).

02.08 Identify the stages of production.

CTE Standards and Benchmarks

02.09	Understand studio terms and jargon.
02.10	Create and organize production paperwork into production bibles (guidebooks) and prepare for presentations.
03.0	Understand intellectual property rights, copyright laws and plagiarism relative to creative assets. The student will be able to:
03.01	Understand the limits and expectations of copyright protection.
03.02	Understand the concepts of "Fair Use" and Fair Dealing."
03.03	Understand the transfer and licensing of creative works.
03.04	Understand the use of "exclusive rights" to intellectual creations.
03.05	Demonstrate the use of digital watermarking.
04.0	Demonstrate proficiency in computer skills. The student will be able to:
04.01	Identify the computer components relevant to 3-D Animation.
04.02	Demonstrate understanding of computer performance specifications.
04.03	Compare and contrast differences between business machines and workstations.
04.04	Demonstrate best practices of computer safety and ergonomics.
04.05	Demonstrate understanding of operating systems.
04.06	Perform storage management operations.
05.0	Demonstrate knowledge of photo editing software. The student will be able to:
05.01	Demonstrate understanding of file formats and storage options.
05.02	Identify parts of the software interface.
05.03	Demonstrate the ability to use each of the basic tool sets.
05.04	Demonstrate the ability to import, export and save images.
05.05	Demonstrate understanding of layers and channels.
05.06	Demonstrate understanding of filters, effects and plug-ins.

CTE Standards and Benchmarks

05.07	Demonstrate understanding of file presets.
05.08	Demonstrate the ability to select portions of an image for manipulation.
05.09	Demonstrate the ability to transform selections and images (crop, scale).
05.10	Demonstrate the ability to color-correct images (brightness, hue, contrast)
05.11	Demonstrate the ability to use brushes for image creation and correction.
05.12	Understand non-destructive and destructive operations.
05.13	Demonstrate the ability to import, paint and export 3-D objects
05.14	Demonstrate the basic use of video in photo-editing software.
06.0	Demonstrate knowledge of production writing as it relates to 3-D animation. The student will be able to:
06.01	Understand the job of a scriptwriter.
06.02	Identify target audiences, markets, and demographics.
06.03	Identify the elements of a script.
06.04	Develop the intended message of a script.
06.05	Demonstrate the ability to write a treatment.
06.06	Demonstrate the ability to write a professionally formatted script.
06.07	Identify the genre of a story.
06.08	Define the characters and setting for a story.
06.09	Demonstrate the ability to breakdown a script into production elements (e.g., cast, props).
07.0	Demonstrate knowledge of art direction. The student will be able to:
07.01	Develop the overall visual appearance of an animation.
07.02	Demonstrate the ability to create moods with style.
07.03	Determine the geographic location and time period of a story.

CTE Standards and Benchmarks

07.04	Understand the importance of art direction as it pertains to the intended message.
07.05	Understand the use of color in art direction.
07.06	Document the technical aspects of art direction.
07.07	Perform assignments in a professional manner and according to industry standards.
08.0	Demonstrate knowledge of character development. The student will be able to:
08.01	Demonstrate an understanding of character profiles.
08.02	Demonstrate the ability to develop character résumés/profiles.
08.03	Develop the look and design for a character that reflects the art direction.
08.04	Understand the technical challenges/limitations of a character.
09.0	Demonstrate knowledge of storyboarding. The student will be able to:
09.01	Demonstrate understanding of visual storytelling and how storyboards are used during production.
09.02	Identify common aspect ratios and demonstrate how to calculate ratios.
09.03	Demonstrate understanding of camera framing and camera movement.
09.04	Develop a visual style using the art direction.
09.05	Break down a script into the various camera shots and character actions.
09.06	Demonstrate understanding of perspective and depth of field.
09.07	Demonstrate knowledge of lighting and color use.
09.08	Demonstrate the ability to sketch a storyboard (including characters).
09.09	Demonstrate the ability to use storyboarding software or illustration software.
10.0	Demonstrate knowledge of animatics. The student will be able to:
10.01	Demonstrate understanding of animatics and how they are used during production.
10.02	Identify the different types of animatics.

CTE Standards and Benchmarks

10.03	Demonstrate understanding of shot timing.
10.04	Break down a script into the various camera shots and character actions.
10.05	Understand the concept of a working print.
11.0	Demonstrate knowledge of video-editing software. The student will be able to:
11.01	Demonstrate understanding of file formats and storage options.
11.02	Identify parts of the software interface.
11.03	Demonstrate the ability to use each of the basic tool sets.
11.04	Demonstrate the ability to import, export and save video.
11.05	Demonstrate understanding of layers and compositing.
11.06	Demonstrate understanding of filters, effects and plug-ins.
11.07	Demonstrate understanding of file presets.
11.08	Demonstrate understanding of rendering processes.
11.09	Demonstrate the ability to transform video (crop, scale).
11.10	Demonstrate the ability to color-correct images (brightness, hue, contrast).
11.11	Demonstrate the ability to use brushes for image creation and correction.
11.12	Understand non-destructive and destructive operations.
11.13	Demonstrate the compositing integration of rendered 3-D animation with video.
12.0	Demonstrate appropriate voice acting skills. The student will be able to:
12.01	Demonstrate an understanding of how to mark a script for voice-over (VO).
12.02	Demonstrate the ability to read aloud in a professional manner.
12.03	Demonstrate an understanding of the use of phonemes and facial morphs for lip-sync animation.
12.04	Understand the concept of voice acting and playing a role while speaking.

CTE Standards and Benchmarks

12.05 Perform assignments in a professional manner and according to industry standards.

13.0 Demonstrate basic audio production. The student will be able to:

13.01 Understand the concept and mechanics of recording environment set-up.

13.02 Demonstrate understanding of digital audio recording hardware.

13.03 Demonstrate understanding of the proper use of microphones.

13.04 Demonstrate knowledge of audio codecs and media.

13.05 Understand the history of Foley and sound effects production.

14.0 Demonstrate knowledge of audio editing software. The student will be able to:

14.01 Demonstrate understanding of file formats and storage options.

14.02 Identify parts of the software interface.

14.03 Demonstrate the ability to use each of the basic tool sets.

14.04 Demonstrate the ability to import, export and save audio.

14.05 Demonstrate the ability to utilize multiple tracks.

14.06 Demonstrate understanding of filters, effects and plug-ins.

14.07 Demonstrate understanding of file presets.

14.08 Demonstrate understanding of audio rendering processes.

14.09 Demonstrate the ability to edit, cut, and delete.

14.10 Understand non-destructive and destructive operations.

15.0 Demonstrate knowledge of funding presentations and pitches. The student will be able to:

15.01 Understand the network associated with product distribution.

15.02 Identify the job titles and roles of distributors.

15.03 Identify potential markets, target audiences, and products.

CTE Standards and Benchmarks

15.04 Effectively convey a message by utilizing the available presentation software and/or other methods.

15.05 Develop a script of talking points.

15.06 Effectively communicate a message or pitch.

**Florida Department of Education
Student Performance Standards**

Course Title: 3-D Animation Technology 2
Course Number: 8718120
Course Credit: 1

Course Description:

This course focuses on 3-D animation modeling processes. Students learn animation modeling principles, NURBS and polygonal modeling, and utilize the software related to 3-D animation.

CTE Standards and Benchmarks

16.0 Understand modeling in relation to the production process. The student will be able to:

16.01 Define *modeling* as a process.

16.02 Define the role of a modeler.

16.03 Identify job titles associated with modeler.

16.04 Identify modeling in the production pipeline.

17.0 Demonstrate knowledge of animation principles as they relate to modeling. The student will be able to:

17.01 Demonstrate an understanding of the principle of *squash and stretch*.

17.02 Demonstrate an understanding of the principle of *anticipation*.

17.03 Demonstrate an understanding of the principle of *staging*.

17.04 Demonstrate an understanding of the principles of *straight ahead action* and *pose-to-pose*.

17.05 Demonstrate an understanding of the principles of *follow through* and *overlapping action*.

17.06 Demonstrate an understanding of the principle of *ease in/ease out*.

17.07 Demonstrate an understanding of the principle of *arcs*.

17.08 Demonstrate an understanding of the principle of *secondary action*.

17.09 Demonstrate an understanding of the principle of *timing*.

CTE Standards and Benchmarks

17.10	Demonstrate an understanding of the principle of <i>exaggeration</i> .
17.11	Demonstrate an understanding of the principle of <i>solid drawing</i> .
17.12	Demonstrate an understanding of the principle of <i>appeal</i> .
18.0	Demonstrate knowledge of modeling principles. The student will be able to:
18.01	Understand 3-D construction theory.
18.02	Demonstrate understanding of primitives and parametric modeling.
18.03	Demonstrate an understanding of NURBS, splines, and polygonal modeling.
18.04	Demonstrate the ability to use reference images and files while modeling.
19.0	Demonstrate knowledge of 3-D Animation software. The student will be able to:
19.01	Identify the computer requirements for 3-D animation software.
19.02	Compare and contrast available 3-D animation software options.
19.03	Identify file formats and protocols.
19.04	Demonstrate an understanding of naming conventions.
19.05	Develop software and file backup plans.
19.06	Identify common icons within the software.
19.07	Demonstrate the use of keyboard shortcuts.
19.08	Demonstrate the use of a three-button mouse.
20.0	Demonstrate knowledge of 3-D Animation software navigation. The student will be able to:
20.01	Identify the main windows of a 3-D animation software program.
20.02	Identify common window layouts.
20.03	Identify tool icons within the software.
20.04	Understand the significance of keyboard shortcut use and efficiency.

CTE Standards and Benchmarks

20.05	Demonstrate the use of keyboard shortcuts.
20.06	Demonstrate an understanding of the Euclidean Geometry Model (x-y-z coordinate system).
20.07	Demonstrate an understanding of attribute managers.
20.08	Demonstrate an understanding of layers.
20.09	Navigate the modeling window using pan, rotate, and zoom controls.
20.10	Demonstrate knowledge of selection tools (e.g., lasso, loop).
20.11	Utilize wireframe, Gouraud shading, lines, boxes, modes.
20.12	Demonstrate use of selection sets.
20.13	Undo and redo an action within the program.
20.14	Locate and utilize the help menu.
21.0	Demonstrate knowledge of NURBS modeling. The student will be able to:
21.01	Demonstrate an understanding of points, vertices, edges, and polygons.
21.02	Demonstrate an understanding of poly-count.
21.03	Demonstrate an understanding of primitives.
21.04	Define <i>parametric primitives</i> .
21.05	Locate the properties, attributes, and coordinates of an object.
21.06	Demonstrate understanding of non-uniform rational basis splines (NURBS).
21.07	Demonstrate understanding of splines and generators (e.g., extrude, lathe, sweep).
21.08	Understand the use of hierarchy.
21.09	Demonstrate an understanding of Boolean Objects.
21.10	Demonstrate an understanding of Null Objects.
21.11	Demonstrate an understanding of scene management (hiding and un-hiding).

CTE Standards and Benchmarks

21.12	Demonstrate an understanding of arrays.
22.0	Demonstrate knowledge of polygonal modeling. The student will be able to:
22.01	Demonstrate an understanding of N-gons.
22.02	Demonstrate an understanding of subdivision.
22.03	Demonstrate basic polygon editing and manipulation.
22.04	Demonstrate knowledge of point management (location).
22.05	Demonstrate the ability to create polygonal models from points.
22.06	Demonstrate an understanding of cutting/division tools.
22.07	Demonstrate an understanding of extruders.
22.08	Demonstrate an understanding of symmetry.
22.09	Demonstrate an understanding of hyper-NURBS.
22.10	Demonstrate an understanding of basic deformers (e.g., bend, twist, melt).

**Florida Department of Education
Student Performance Standards**

Course Title: 3-D Animation Technology 3
Course Number: 8718130
Course Credit: 1

Course Description:

Students learn about 3-D animation lighting, the use of basic materials and textures, character set-up, and 3-D animation rendering processes.

CTE Standards and Benchmarks

23.0	Demonstrate knowledge of basic lighting. The student will be able to:
23.01	Compare and contrast real lighting with 3-D lighting.
23.02	Demonstrate an understanding 3-point lighting.
23.03	Demonstrate an understanding of low-key and high-key lighting.
23.04	Use “include/exclude” commands to target light on objects.
23.05	Demonstrate use of negative intensity.
23.06	Demonstrate an understanding of the hierarchy of lights.
23.07	Demonstrate an understanding of area lights.
23.08	Demonstrate an understanding of volumetric lights.
23.09	Demonstrate an understanding of radiosity/global illumination.
23.10	Demonstrate an understanding of ambient occlusion.
23.11	Demonstrate an understanding of HDRI lighting.
23.12	Demonstrate an understanding of how light settings will affect render times.
24.0	Demonstrate knowledge of basic materials and textures. The student will be able to:
24.01	Demonstrate an understanding of material and texture storage.

CTE Standards and Benchmarks

24.02	Apply textures to an object.
24.03	Demonstrate an understanding of procedural shaders.
24.04	Demonstrate an understanding of channels.
24.05	Adjust the transparency, luminance, and reflection of a material.
24.06	Demonstrate an understanding of displacement maps.
24.07	Demonstrate an understanding of bump maps.
24.08	Demonstrate knowledge of material projections.
24.09	Demonstrate an understanding of UV mapping.
24.10	Demonstrate an understanding of 3-D painting.
24.11	Understand how light affects the look of materials.
24.12	Understand how camera angles affect the look of materials.
25.0	Demonstrate knowledge of basic animation. The student will be able to:
25.01	Apply animation principles to object animation.
25.02	Demonstrate an understanding of animation timelines.
25.03	Demonstrate an understanding of key framing.
25.04	Demonstrate an understanding of F-curves.
25.05	Record and edit key frames.
25.06	Demonstrate the use of controllers.
25.07	Demonstrate an understanding of ease in/out.
25.08	Demonstrate an understanding of camera animation.
25.09	Render low-quality reference animation.
26.0	Demonstrate knowledge of basic character setup. The student will be able to:

CTE Standards and Benchmarks

26.01	Compare and contrast rigging approaches and styles.
26.02	Demonstrate an understanding of the rig as it relates to the model.
26.03	Demonstrate an understanding of mesh morphing.
26.04	Demonstrate an understanding of skeletal systems.
26.05	Demonstrate an understanding of bones and joints.
26.06	Demonstrate an understanding of bone/joint hierarchies and naming conventions.
26.07	Demonstrate an understanding of controllers.
26.08	Demonstrate an understanding of spline inverse kinematics (IK).
26.09	Demonstrate an understanding of kinematic chains.
26.10	Demonstrate an understanding of skins and weights.
26.11	Demonstrate the ability to create a visual selector for the rig.
27.0	Demonstrate knowledge of basic 3-D rendering. The student will be able to:
27.01	Demonstrate an understanding of processor, hardware, and software rendering techniques.
27.02	Determine the final render format.
27.03	Demonstrate an understanding of basic render settings.
27.04	Demonstrate understanding of title safe, action safe, and render safe.
27.05	Select the range of frames to be rendered.
27.06	Demonstrate an understanding of global illumination (radiosity) render settings.
27.07	Demonstrate an understanding of anti-aliasing.
27.08	Demonstrate an understanding of net rendering.
27.09	Demonstrate an understanding of alpha channels.
27.10	Render animation as a movie or image sequence.

CTE Standards and Benchmarks

27.11 Compile image sequences into a movie.

27.12 Demonstrate an understanding of the benefits, purpose and workflow of multi-pass rendering.

27.13 Demonstrate an understanding of the batch render process.

**Florida Department of Education
Student Performance Standards**

Course Title: 3-D Animation Technology 4
Course Number: 8718140
Course Credit: 1

Course Description:

Students explore and utilize advanced animation techniques.

CTE Standards and Benchmarks

28.0	Understand the role of a texture artist in relation to the production process. The student will be able to:
28.01	Define texturing as a process.
28.02	Define the role of a texture artist.
28.03	Identify job titles associated with a texture artist.
28.04	Identify texture creation in the production pipeline.
28.05	Demonstrate knowledge of the differences between textures and shaders.
28.06	Demonstrate an understanding of texture projection methods.
28.07	Demonstrate the application of UV coordinates to texture mapping.
28.08	Demonstrate the round-trip integration of photo editing software and a 3-D host for texture development.
28.09	Demonstrate how to link texture and shade properties to object movement via either visual or scripted programming relationships.
29.0	Demonstrate knowledge of color theory. The student will be able to:
29.01	Demonstrate an understanding of additive and subtractive color mixtures.
29.02	Demonstrate an understanding of hue, saturation, and brightness.
29.03	Demonstrate an understanding of complementary colors and composition.
29.04	Identify warm and cool colors.

CTE Standards and Benchmarks

29.05 Demonstrate an understanding of the psychology of color influence.

30.0 Demonstrate knowledge of advanced material and texture creation. The student will be able to:

30.01 Determine required materials and textures for a model based on production design sheets and reference images.

30.02 Determine the material and texture properties to create.

30.03 Select an appropriate style (e.g., realistic, hyper-real, simplified).

30.04 Determine the appropriate color pallets to use.

30.05 Determine appropriate image resolution and file format for use in 3-D applications.

30.06 Demonstrate knowledge of material and texture creation techniques and approaches.

30.07 Identify the tools and software used to create materials and textures.

30.08 Acquire raw texture images from digital stills or scans.

30.09 Create tiled textures using photo-editing software.

31.0 Demonstrate knowledge of cloth and hair. The student will be able to:

31.01 Determine cloth and/or hair requirements based on production design sheets and reference images.

31.02 Define the physical properties associated with cloth and hair.

31.03 Demonstrate knowledge of cloth and hair toolsets.

31.04 Determine appropriate materials to use with hair.

31.05 Demonstrate knowledge of hair manipulation and management.

31.06 Demonstrate knowledge of cloth and hair lighting techniques.

31.07 Demonstrate knowledge of the dynamic simulation parameters required to make cloth and hair perform to production requirements.

31.08 Demonstrate knowledge of how cloth and hair interact with other objects.

32.0 Demonstrate knowledge of cell-shading. The student will be able to:

32.01 Understand the history of cell-shading.

CTE Standards and Benchmarks

32.02	Determine the appropriate use of cell-shading techniques.
32.03	Determine cell-shading requirements needed for a model based on production design sheets and reference images.
32.04	Demonstrate knowledge of lighting techniques used with cell-shading.
32.05	Determine appropriate render settings for cell-shading.
32.06	Determine the appropriate materials and shaders to use with cell-shading.
33.0	Demonstrate knowledge of texture baking. The student will be able to:
33.01	Describe the advantages of baking textures.
33.02	Determine the appropriate use of baked textures.
33.03	Demonstrate texture baking procedures.
33.04	Export models with baked textures.
33.05	Determine the appropriate render settings needed for baked textures.
34.0	Demonstrate knowledge of texture maps. The student will be able to:
34.01	Define the properties of displacement, bump, and normal maps.
34.02	Determine the appropriate texture mapping requirements for a model based on production design sheets and reference images.
34.03	Demonstrate knowledge of displacement map placement tools and techniques.
34.04	Demonstrate knowledge of bump map tools and techniques.
34.05	Demonstrate knowledge of normal map tools and techniques.
35.0	Demonstrate knowledge of 3-D painting software. The student will be able to:
35.01	Identify available 3-D paint programs.
35.02	Demonstrate knowledge of UV mapping tools.
35.03	Prepare a UV map for export for use with photo-editing software.
35.04	Demonstrate knowledge of 3-D painting tools within 3-D animation software.

CTE Standards and Benchmarks

35.05 Apply a painted image map to a model.

**Florida Department of Education
Student Performance Standards**

Course Title: 3-D Animation Technology 5
Course Number: 8718150
Course Credit: 1

Course Description:

This course focuses on rigging, morphing and facial animation.

CTE Standards and Benchmarks	
36.0	Demonstrate knowledge of rigging. The student will be able to:
36.01	Define rigging as a process.
36.02	Define the role of a rigger.
36.03	Identify the job titles associated with a rigger.
36.04	Identify rigging creation in the production pipeline.
36.05	Demonstrate knowledge of forward kinematics versus inverse kinematics.
36.06	Demonstrate an understanding of the joint weighting process.
36.07	Demonstrate the proper hierarchical structure of goals and nulls to construct effective control objects.
37.0	Demonstrate knowledge of morphing. The student will be able to:
37.01	Define morphing as it relates to animation.
37.02	Demonstrate knowledge of morphing tools.
37.03	Demonstrate knowledge of model meshes.
37.04	Define the model area to be morphed.
37.05	Create morph target points.
37.06	Demonstrate knowledge of controllers and relational morphs (driver, driven).

CTE Standards and Benchmarks

37.07	Demonstrate knowledge of rotational morphs.
37.08	Demonstrate knowledge of key frame animation and morph tags.
38.0	Demonstrate knowledge of facial animation. The student will be able to:
38.01	Demonstrate knowledge of animation-related facial morphing techniques.
38.02	Demonstrate knowledge of phoneme-viseme principles for lip synchronization.
38.03	Apply facial expression animation to complement lip synchronization.
38.04	Break down a script into a sound chart.
38.05	Create a set of controls for each sound and expression.
39.0	Demonstrate knowledge of advanced rigging. The student will be able to:
39.01	Determine uses for advanced rigging.
39.02	Demonstrate knowledge of advanced rigging tools.
39.03	Prepare a rigged model for animation.
39.04	Demonstrate knowledge of advanced scripting relative to rigging.
39.05	Create complex rigs for greater precision and control.
39.06	Demonstrate knowledge of deformers.
39.07	Demonstrate knowledge of motion capture rigging.
39.08	Determine necessary joint/bone hierarchy for motion capture rigging.
39.09	Apply pre-captured motion data to a motion capture rig.

**Florida Department of Education
Student Performance Standards**

Course Title: 3-D Animation Technology 6
Course Number: 8718160
Course Credit: 1

Course Description:

This course focuses on motion capture systems, system setup, and the pre-production process.

CTE Standards and Benchmarks	
40.0	Demonstrate knowledge of motion capture systems. The student will be able to:
40.01	Demonstrate knowledge of the history of motion capture.
40.02	Demonstrate an awareness of emerging technologies in the industry.
40.03	Demonstrate understanding of motion capture for 3-D production.
40.04	Define the role of a motion capture technician.
40.05	Demonstrate understanding of optical, magnetic, and mechanical systems.
40.06	Demonstrate understanding of software-based or simulated motion capture systems.
40.07	Demonstrate understanding of the motion capture production pipeline.
41.0	Demonstrate knowledge of motion capture system setup. The student will be able to:
41.01	Determine the capture volume based on available space and cameras.
41.02	Demonstrate understanding of XYZ perimeters in lab orientation.
41.03	Demonstrate understanding of motion capture computer hardware requirements and software security dongles.
41.04	Demonstrate understanding of the tools and instruments specific to motion capture.
41.05	Demonstrate the ability to create individual optical markers and arrays using optical tape and Velcro strapping.
42.0	Demonstrate knowledge of motion capture preproduction. The student will be able to:

CTE Standards and Benchmarks

42.01 Identify the use of motion capture as it relates to a production plan.

42.02 Mark a script and shot list for motion capture.

42.03 Understand the role of motion capture talent/actors.

42.04 Rehearse the performance with talent.

42.05 Identify the necessary captured performance props.

42.06 Determine real-time video needs.

**Florida Department of Education
Student Performance Standards**

Course Title: 3-D Animation Technology 7
Course Number: 8718170
Course Credit: 1

Course Description:

This course focuses on advanced 3-D animation.

CTE Standards and Benchmarks

43.0	Understand the role of a 3-D animator in relation to the production process. The student will be able to:
43.01	Define animation as a process.
43.02	Define the role of an animator.
43.03	Identify job titles associated with an animator.
43.04	Identify animation in the production pipeline.
44.0	Demonstrate knowledge of advanced animation. The student will be able to:
44.01	Demonstrate knowledge of how nondestructive deformers affect animation.
44.02	Demonstrate knowledge of how muscle deformers integrate with a character rig.
44.03	Demonstrate knowledge of transforms and animation transfers from one object or object hierarchy to another.
45.0	Demonstrate knowledge of motion graphics. The student will be able to:
45.01	Demonstrate knowledge of 3-D animated motion graphics.
45.02	Demonstrate knowledge of motion graphics tools and techniques.
45.03	Demonstrate knowledge of integrated dynamics to simulate gravitational and collision effects.
45.04	Demonstrate the integration of standard animation techniques to drive motion graphics elements based on node-based visual programming.
45.05	Demonstrate an applied working knowledge of motion graphics for broadcast application in TV show opens and commercials.

CTE Standards and Benchmarks

46.0 Demonstrate knowledge of animation behaviors and scripting. The student will be able to:

46.01 Determine appropriate use of behaviors and automated animation.

46.02 Demonstrate the ability to apply behavior to an object.

46.03 Demonstrate the ability to apply multiple behaviors using node or visual systems.

46.04 Demonstrate the ability to use object-oriented programming language to create scripts.

46.05 Demonstrate understanding of the scripting console and commands.

47.0 Demonstrate knowledge of particle systems. The student will be able to:

47.01 Demonstrate understanding of particle emitters.

47.02 Prepare objects to be emitted.

47.03 Determine the direction of emission and coordinate.

47.04 Determine birthrate and lifetime.

47.05 Determine scale, speed, and rotation.

47.06 Demonstrate the ability to use animated particles.

47.07 Demonstrate the ability to create smoke, fire, and sparks using emitters and materials.

47.08 Apply dynamics to an emitter, including wind/gravity.

47.09 Demonstrate use of key frame animation or triggers.

48.0 Demonstrate knowledge of advanced audio production. The student will be able to:

48.01 Edit and export sound effects for use in video-editing software.

48.02 Demonstrate the ability to place audio in 3-D space using 3-D animation software.

49.0 Demonstrate knowledge of dynamics (physics). The student will be able to:

49.01 Demonstrate a basic understanding of physics principles (e.g., mass, velocity, collision).

49.02 Determine when to use physics instead of key frame animation.

CTE Standards and Benchmarks

49.03	Apply physics tools and commands to models in a simulation.
49.04	Demonstrate an understanding of rigid and soft bodies.
49.05	Demonstrate an understanding of forces (e.g., gravity, drag, wind).
49.06	Demonstrate an understanding of collision detection.
50.0	Demonstrate knowledge of video compositing software. The student will be able to:
50.01	Demonstrate understanding of file formats and storage options.
50.02	Identify parts of the software interface.
50.03	Demonstrate the ability to use each of the basic tool sets.
50.04	Demonstrate the ability to import files and videos to be composited.
50.05	Demonstrate understanding of layers and compositing.
50.06	Demonstrate understanding of filters, effects and plug-ins.
50.07	Demonstrate understanding of motion paths.
50.08	Demonstrate understanding of lighting effects.
50.09	Demonstrate understanding of rendering processes.
50.10	Demonstrate the ability to mask video.
50.11	Demonstrate the ability to color-correct video (e.g., brightness, hue, contrast).
50.12	Demonstrate the ability to use vector and color keying tools.
50.13	Demonstrate understanding of particle systems.
50.14	Demonstrate understanding of time correction.
50.15	Demonstrate the ability to export final video to use with video-editing software.
50.16	Demonstrate the ability to prepare the 3-D scene for compositing using alpha channel setting in the 3-D host as well as object buffers that will be assigned video sources in the compositing software.
50.17	Demonstrate the ability to add camera and lighting positions and rotations for use in the compositing software.

CTE Standards and Benchmarks

51.0 Demonstrate knowledge of post-production. The student will be able to:

51.01 Import composited video into the timeline.

51.02 Import final audio into the timeline.

51.03 Edit video using the animatic as a reference.

51.04 Export a video for use in websites, DVDs and other media formats.

51.05 Encode and assemble a DVD for distribution.

52.0 Develop a professional portfolio of work. The student will be able to:

52.01 Identify the elements of a professional portfolio and résumé.

52.02 Examine and determine work samples to include in a portfolio and résumé.

52.03 Gather illustrations, audio, video, and work history details to include in a portfolio and résumé.

52.04 Understand web-based portfolio distribution.

52.05 Determine formatting for the portfolio and résumé.

52.06 Produce a résumé for final review.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Program Title: Telecommunications Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8730200
CIP Number	0647010301
Grade Level	9-12
Program Length	4 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	SkillsUSA
SOC Codes (all applicable)	49-2022 – Telecommunications Equipment Installers and Repairers, Except Line Installers
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment or advanced training in a variety of occupations in the Telecommunications industry.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The course content includes, but is not limited to, installation, maintenance and servicing of telecommunications systems, and the diagnosis and correction of operational problems in telecommunications arising from mechanical, electrical, electronics and hardware malfunctions.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of four (4) credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8730210	Telecommunications Technology 1	COMP SVC 7G	1 credit	49-2022	2	CT
8730220	Telecommunications Technology 2	ELECTRICAL @7 7G	1 credit	49-2022	2	CT
8730230	Telecommunications Technology 3	ELECTRONIC @7 7G	1 credit	49-2022	2	CT
8730240	Telecommunications Technology 4	TELCOM 7G	1 credit	49-2022	2	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

Telecommunication Technology 1

- 01.0 Explain and practice workplace safety.
- 02.0 Demonstrate basic work practices.
- 03.0 Demonstrate the use of safety equipment.
- 04.0 Inspect tools and equipment.
- 05.0 Inspect test equipment.
- 06.0 Explain industry code of conduct.
- 07.0 Demonstrate traffic control.
- 08.0 Demonstrate pole climbing.
- 09.0 Explain roadside safety.
- 10.0 Explain electrical hazards.
- 11.0 Perform data line safety checks.
- 12.0 Demonstrate proficiency in making electrical connections, splices and basic field repair.
- 13.0 Troubleshoot and repair telecommunications system wiring.
- 14.0 Demonstrate proficiency in customer relations.
- 15.0 Demonstrate appropriate understanding of basic math.
- 16.0 Demonstrate proficiency in the use of tools and test equipment used in the telecommunications industry.
- 17.0 Identify types of cables and wire used within the drop system; describe proper handling techniques.
- 18.0 Describe the function and use of interfaces and terminations within the customer's premises.
- 19.0 Recognize the use and function of active devices used within the customer's premises.
- 20.0 Recognize the use and function of security devices used within the customer's premises.
- 21.0 Recognize the use and function of hand and power tools.
- 22.0 Explain how building construction affects routing choices for interior and exterior wiring.
- 23.0 Recognize the basic methods and procedures of planning and installing aerial drop cable at the customer's premises.
- 24.0 Recognize the basic methods and procedures of attaching the drop cable at the tap.
- 25.0 Recognize the methods and procedures of installing exterior wire and cable at the customer's premises.
- 26.0 Demonstrate coaxial cable bonding practices at the customer's premises.

Telecommunication Technology 2

- 27.0 Demonstrate science knowledge and skills.
- 28.0 Demonstrate proficiency in basic Direct Current (DC) circuitry.
- 29.0 Demonstrate proficiency in basic Alternating Current (AC) circuitry.
- 30.0 Analyze technical data associated with cable validation and fault location.
- 31.0 Install, repair, terminate and test network cabling.

- 32.0 Demonstrate advanced skills in test equipment usage to locate faults.
- 33.0 Recognize the function, use, care, and maintenance of test equipment.

Telecommunication Technology 3

- 34.0 Demonstrate usage of test equipment to validate network and telecommunications cabling systems.
- 35.0 Demonstrate a basic understanding of computer system architecture.
- 36.0 Demonstrate proficiency in peripheral equipment.
- 37.0 Demonstrate proficiency in electronic information exchange.
- 38.0 Recognize basic analog cable network configuration and understand how signal flows from the network to the customer's television.
- 39.0 Understand basic digital signal characteristics and how digital signals are used in cable telecommunications system.
- 40.0 Recognize the components of a Hybrid Fiber Coaxial (HFC) cable system.

Telecommunication Technology 4

- 41.0 Demonstrate proficiency in site requirements and considerations.
- 42.0 Use tables and charts.
- 43.0 Prepare worksite plans.
- 44.0 Demonstrate proficiency in twisted pair design.
- 45.0 Demonstrate advanced cable repair techniques. (Optional)

**Florida Department of Education
Student Performance Standards**

Course Title: Telecommunication Technology 1
Course Number: 8730210
Course Credit: 1

Course Description:

This course covers competencies in safety, tools, traffic control, pole climbing, DC circuits, troubleshooting, and customer service.

CTE Standards and Benchmarks	
01.0	Explain and practice workplace safety. The student will be able to:
01.01	Demonstrate office safety.
01.02	Demonstrate safety outside of the office.
01.03	Explain fiber optics safety.
01.04	Demonstrate safety for splicing.
01.05	Demonstrate or explain bucket truck safety. (Optional)
02.0	Demonstrate basic work practices. The student will be able to:
02.01	Demonstrate good work attitudes.
02.02	Explain work and business ethics.
02.03	Explain general code of conduct.
03.0	Demonstrate the use of safety equipment. The student will be able to:
03.01	Correctly use personal safety equipment used in the telecommunications industry.
03.02	Explain the hazards associated with the telecommunications industry.
04.0	Inspect tools and equipment. The student will be able to:

CTE Standards and Benchmarks

04.01	Safety-inspect support equipment.
04.02	Safety-inspect tools.
05.0	Inspect test equipment. The student will be able to:
05.01	Evaluate and inspect test equipment.
06.0	Explain industry code of conduct. The student will be able to:
06.01	Explain the purpose of a code of conduct.
06.02	List the basic parts of the industry code of conduct.
06.03	Explain how the code of conduct protects both customers and workers.
06.04	Explain the relationship between the code of conduct and the laws governing privacy of telephone conversations.
07.0	Demonstrate traffic control. The student will be able to:
07.01	Use roadside signals. (Optional)
07.02	Use signage, barricades and cones. (Optional)
07.03	Perform flagging and hand signals. (Optional)
07.04	Explain general outdoor safety procedures.
08.0	Demonstrate pole climbing. The student will be able to:
08.01	Conduct a pole-climbing safety inspection. (Optional)
08.02	Use pole-climbing equipment in a safe and correct manner. (Optional)
08.03	Explain the hazards of pole climbing.
08.04	Demonstrate safe and correct ladder usage.
08.05	Select correct ladder for telecommunications work.
08.06	Demonstrate ladder rigging for aerial installation.

CTE Standards and Benchmarks

08.07	Demonstrate pole climbing to install drops and perform splicing. (Optional)
09.0	Explain roadside safety. The student will be able to:
09.01	Explain the hazards encountered around roadways.
09.02	Describe proper safety around roadways.
10.0	Explain electrical hazards. The student will be able to:
10.01	Identify the hazards associated with work on telecommunications lines and equipment.
10.02	Test and analyze telecommunications equipment and lines for safety hazards.
11.0	Perform data line safety checks. The student will be able to:
11.01	Check and identify hazardous line currents and voltages.
12.0	Demonstrate proficiency in making electrical connections, splices and basic field repairs. The student will be able to:
12.01	Apply proper Occupational Safety Health Administration (OSHA) Safety Standards.
12.02	Make electrical connections.
12.03	Identify and use hand tools properly.
12.04	Identify and use power tools properly.
12.05	Demonstrate acceptable soldering techniques.
12.06	Demonstrate acceptable de-soldering techniques.
12.07	Demonstrate Electrostatic Discharge (ESD) safety procedures.
12.08	Describe the construction of Printed Circuit Boards (PCBs). (Optional)
12.09	Demonstrate rework and repair techniques. (Optional)
13.0	Troubleshoot and repair telecommunications system wiring. The student will be able to:
13.01	Test telecommunications systems and evaluate based on established criteria.

CTE Standards and Benchmarks

13.02	Identify range of fault conditions for telecommunications systems.
13.03	Demonstrate telecommunications fault identification skills.
13.04	Use field documentation techniques for repair of systems.
13.05	Use test equipment and logic to locate faults.
13.06	Demonstrate proficiency in repair techniques using splices, closure assembly and punch-down terminations.
13.07	Validate repaired system to industry criteria.
14.0	Demonstrate proficiency in customer relations. The student will be able to:
14.01	Describe and demonstrate appropriate personal hygiene and professional attire.
14.02	Describe and demonstrate effective listening techniques.
14.03	Describe and apply techniques for installing customer confidence and satisfaction.
14.04	Describe and apply techniques for keeping the customer informed
14.05	Describe and apply effective follow-up techniques.
14.06	Demonstrate discretion in interacting with customers in field and retail environments.
14.07	Demonstrate an understanding of basic conflict resolution.
15.0	Demonstrate appropriate understanding of basic math. The student will be able to:
15.01	Solve problems for volume, weight, area and circumference; and determine perimeter measurements for rectangles, squares and cylinders.
15.02	Measure tolerances on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
15.03	Add, subtract, multiply and divide using fractions, decimals and whole numbers.
15.04	Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
15.05	Demonstrate an understanding of federal, state and local taxes and their computation.
15.06	Use basic algebra to solve job-related problems.

CTE Standards and Benchmarks

16.0 Demonstrate proficiency in the use of tools and test equipment used in the telecommunications industry. The student will be able to:

16.01 Install twisted pair cabling systems.

16.02 Terminate twisted pair cords, plugs and outlets.

16.03 Test installed cables.

16.04 Troubleshoot cables.

16.05 Demonstrate proficiency in the current techniques and equipment used in the telecommunications industry.

16.06 Demonstrate proficiency in usage of NEC codes.

16.07 Demonstrate proficiency in usage of the color codes and configuration.

16.08 Interpret cable substitution hierarchy.

17.0 Identify types of cables and wire used within the drop system; describe proper handling techniques. The student will be able to:

17.01 Differentiate between the coaxial cable types: Underground (flooded), Aerial Messenger, and National Electrical Code (NEC) classification (CATX, CATVX, CATVR, CATVP).

17.02 Demonstrate use of the correct cable type for various customer installations.

17.03 Demonstrate proper cable handling techniques with:

- Drip loops.
- Structural considerations (fastening and attachments).
- Describe the impact of improper handling techniques.
- Describe the impact of improper fastening techniques.

17.04 Define and describe fiber to the “x” (FTTx) terms and fundamentals.

17.05 Understand station/twisted pair wire.

- Identify the types of wire in the home (CAT1, CAT3, CAT5/5e/6, station wire).
- Placement

CTE Standards and Benchmarks

18.0 Describe the function and use of interfaces and terminations within the customer's premises. The student will be able to:

18.01 Understand the types of F-connectors used at the premises.

18.02 Explain the purpose and need of security shields and demonstrate installation and removal.

18.03 Explain drop cable preparation.

18.04 Differentiate between different drop systems splitters/couplers.

18.05 Explain how the design and installation of splitters and couplers can lead to efficient configurations for best signal strength.

18.06 Describe when splitters and couplers are used in the drop system.

18.07 Describe the installation and placement of splitters and couplers in the drop system.

19.0 Recognize the use and function of active devices used within the customer's premises. The student will be able to:

19.01 Define in-house amplifiers and the following characteristics:

- Gain of device.
- Applications (forwards without reverse, passive reverse, active reverse).
- Specifications
- Placement

19.02 Describe situations when an in-house amplifier is necessary.

19.03 Define radio frequency (RF) modulators and in-home signal distribution.

20.0 Recognize the use and function of security devices used within the customer's premises. The student will be able to:

20.01 Define the need for traps and how they work.

20.02 Define the need for security sleeves (security shields).

20.03 Define locking terminators.

20.04 Define lock box/house box and its installation procedures.

CTE Standards and Benchmarks

21.0 Recognize the use and function of hand and power tools. The student will be able to:

- 21.01 Demonstrate the correct and safe methods of using various hand tools (e.g., nut drivers, adjustable wrenches, screwdrivers, wire cutters, scratch awl, knife, pliers, hammer, torque wrench, cable preparation tools, channel locks, IDC Pliers, and modular connector crimper tool).
- 21.02 Demonstrate the correct and safe methods of using various powered tools (e.g., cordless drills, cordless screwdrivers, and electric drill).
- 21.03 Demonstrate the correct and safe methods of using various cable placement tools (e.g., hand line, lay-up sticks, and wall fishing devices).

22.0 Explain how building construction affects routing choices for interior and exterior wiring. The student will be able to:

- 22.01 Distinguish between typical house framing types.
- 22.02 Describe commonly encountered wall stud floor joist locations and dimensions and explain their relevance to drop cable installation.
- 22.03 Describe relevant construction situations and explain their relevance to drop cable installation (e.g., slab, pier and beam, crawlspace, ceiling types, plenum, mobile homes, and attic).

23.0 Recognize the basic methods and procedures of planning and installing aerial drop cable at the customer's premises. The student will be able to:

- 23.01 Explain each of the following considerations regarding aerial drop cable routing techniques during aerial drop installation:
 - Site survey and layout of the exterior customer premises.
 - Obstacles to avoid when routing the aerial drop cable.
 - Clearances to maintain when routing the following drops (e.g., ornamental lighting, sprinkler systems, and invisible dog fencing).

24.0 Recognize the basic methods and procedures of attaching the drop cable at the tap. The student will be able to:

- 24.01 Define tap and each of the following as applicable to the tap; explain purpose and installation method for each of the following:
 - Weatherproofing
 - Terminators
 - Traps and filters
 - Step attenuators

CTE Standards and Benchmarks

- Drop tagging

24.02 Describe how to inspect the tap and measure signal levels.

25.0 Recognize the methods and procedures of installing exterior wire and cable at the customer's premises. The student will be able to:

25.01 Demonstrate the ability to perform a coaxial cable house attachment in a typical cable television system.

25.02 Demonstrate proper house attachment procedures using P-hook.

25.03 Demonstrate proper house attachment procedures using underground routing.

25.04 Distinguish between different types of surfaces and explain how the installation would be accomplished for each surface (e.g., wood, siding, aluminum, steel, vinyl, slate, asbestos, and brick stucco).

25.05 Explain drop cable routing at the house.

25.06 Explain how to route cable around gutters.

25.07 Demonstrate knowledge of the codes governing attachments to electrical masts.

26.0 Demonstrate coaxial cable bonding practices at the customer's premises. The student will be able to:

26.01 Explain the purpose and function of the grounding electrode system.

26.02 Identify the proper locations for bonding the residential cable television drop cable.

26.03 Describe bonding blocks and ground (bonding) wire.

26.04 Explain all components of proper bonding techniques in various dwellings (e.g., single family homes, mobile homes, and multiple dwelling units (MDUs)).

26.05 Describe multiple cable placement practices (e.g., cable entry, materials, use of existing entry points, wiring Topologies).

26.06 Explain interior drop through different areas in a dwelling (e.g., flooring, stud cavities, attic, crawl space, through basement, wall fish, prewire and postwire).

26.07 Describe the methods and procedures for a provision digital box.

**Florida Department of Education
Student Performance Standards**

Course Title: Telecommunication Technology 2
Course Number: 8730220
Course Credit: 1

Course Description:

This course covers competencies in science, Alternating Current (AC) circuits, network cabling, and the use of test equipment.

CTE Standards and Benchmarks

27.0	Demonstrate science knowledge and skills. The student will be able to:
27.01	Demonstrate an understanding of the effects of temperature extremes and moisture content in regard to electronic equipment.
27.02	Demonstrate an understanding of the impact and effects of Electrostatic Discharge (ESD), power surges, grounding, and lightning strikes.
27.03	Apply the scientific method to draw conclusions or make inferences from data.
27.04	Demonstrate deductive reasoning techniques when troubleshooting.
27.05	Demonstrate an understanding of the effects of heat load and ventilation in regard to electronic equipment.
27.06	Identify safety and health related issues including exposure to work-related chemicals and hazardous materials and demonstrate appropriate precautionary measures.
27.07	Demonstrate an understanding of environmental impact and regulations in regard to the appropriate disposal of electronic equipment.
28.0	Demonstrate proficiency in basic Direct Current (DC) circuitry. The student will be able to:
28.01	Solve problems in electronic units utilizing metric prefixes.
28.02	Identify sources of electricity.
28.03	Define voltage, current, resistance, power, and energy.
28.04	Apply Ohm's law and power formulas.
28.05	Identify and interpret industry appropriate color codes and symbols to identify electrical components and values.

CTE Standards and Benchmarks

28.06	Measure properties of a circuit using Volt-Ohm Meters (VOM), Digital Volt Meters (DVM) and oscilloscopes.
28.07	Compute conductance and calculate and measure resistance of conductors and insulators.
28.08	Apply Ohm's law to series circuits.
28.09	Construct and verify operation of series circuits.
28.10	Analyze and troubleshoot series circuits.
28.11	Apply Ohm's law to parallel circuits.
28.12	Construct and verify the operation of parallel circuits.
28.13	Analyze and troubleshoot parallel circuits.
29.0	Demonstrate proficiency in basic Alternating Current (AC) circuitry. The student will be able to:
29.01	Identify properties of an AC signal.
29.02	Identify AC sources.
29.03	Analyze and measure AC signals utilizing VOM and DVM.
29.04	Perform AC safety checks.
29.05	Explain high voltage power systems and hazards.
30.0	Analyze technical data associated with cable validation and fault location. The student will be able to:
30.01	Read and understand telecommunications technical data.
30.02	Interpret diagrams and schematics.
30.03	Document work.
31.0	Install, repair, terminate and test network cabling. The student will be able to:
31.01	Terminate cable using industry standard configuration termination (e.g., RJ11, RJ12, RJ45, BNC, and AUI).
31.02	Install cabling using industry standard tools, telepole, and fish tape.

CTE Standards and Benchmarks

31.03	Punch down cables on standard wiring blocks (66 Block, 110 Block).
31.04	Route cable over aerial and buried drops.
32.0	Demonstrate advanced skills in test equipment usage to locate faults. The student will be able to:
32.01	Operate butt-in test sets.
32.02	Operate toners.
32.03	Operate subscriber line test set.
32.04	Operate cable locator test sets.
33.0	Explain function, use, care, and maintenance of test equipment. The student will be able to:
33.01	Read and understand components of a Signal Level Meter (SLM)
33.02	Identify various display features (e.g., QAM analyzer, return test, video/audio carrier measurements, maintenance and care, and RF operating parameters).
33.03	Demonstrate ability to test television (tracking picture and/or sound impairments).
33.04	Operate Volt Ohm Meter (VOM)/Digital Multi-meter (DMM) using resistance and voltage function.
33.05	Explain all components of signage leakage detectors.
33.06	Demonstrate proper use of cable locators.
33.07	Demonstrate proper use of Time Domain Reflectometer (TDR).
33.08	Understand and demonstrate proper use of Line toner (tone and probe kit).
33.09	Understand and demonstrate proper use of Polarity tester.
33.10	Understand and demonstrate proper use of Return Path tester (example, RSVP).
33.11	Understand and demonstrate proper use of various voice applications (e.g., Butt set, VOM, Wire ID, Wire mapper, Brown meter, and Banjo).
33.12	Understand and demonstrate proper use of cable modem emulator.

CTE Standards and Benchmarks

33.13 Understand what constitutes the Mean Opinion Score (MOS).

33.14 Demonstrate proper use of UTP (Ethernet) Local Area Network (LAN) tester.

33.15 Demonstrate proper use and troubleshooting of Perceptual Evaluation of Speech Quality (PESQ).

**Florida Department of Education
Student Performance Standards**

Course Title: Telecommunication Technology 3
Course Number: 8730230
Course Credit: 1

Course Description:

This course provides competencies in advanced cable repair techniques, test equipment, basic computer architecture, peripheral equipment, and electronic information exchange.

CTE Standards and Benchmarks

34.0	Demonstrate usage of test equipment to validate network and telecommunications cabling systems. The student will be able to:
34.01	Validate telephone lines using industry standard procedures.
34.02	Validate high-speed digital lines using industry standard procedures.
34.03	Validate advanced signal lines (fiber optics).
35.0	Demonstrate a basic understanding of computer system architecture. The student will be able to:
35.01	Identify network configurations.
35.02	Distinguish between faults caused by wiring verses architecture configuration.
35.03	Install cable connectors to match architecture.
35.04	Explain cable limitations due to architecture.
36.0	Demonstrate proficiency in peripheral equipment. The student will be able to:
36.01	Demonstrate an understanding of input/output devices.
36.02	Identify and define serial and parallel interface standards.
36.03	Troubleshoot, install, and upgrade telecommunications devices and adapter cards (e.g., NIC, modem).
36.04	Demonstrate professional connector assembly procedures.

CTE Standards and Benchmarks

37.0	Demonstrate proficiency in electronic information exchange. The student will be able to:
37.01	Install, connect, and maintain network clients to various network operating systems.
37.02	Connect and configure computers for network connectivity.
37.03	Describe use and system maintenance of a Wide Area Network (WAN) and telecommunications system.
37.04	Demonstrate knowledge of network protocols.
37.05	Demonstrate knowledge of the fundamentals of an Internet system.
37.06	Demonstrate knowledge of telecommunications services and standards.
38.0	Recognize basic analog cable network configuration and understand how signal flows from the network to the customer's television. The student will be able to:
38.01	Describe in basic terms of "analog signal levels".
39.0	Understand basic digital signal characteristics and how digital signals are used in cable telecommunications systems. The student will be able to:
39.01	Understand the basics of digital signals.
39.02	Describe in basic terms of digital modulation.
39.03	Describe signal distribution methods.
39.04	Describe virtual channel mapping.
40.0	Recognize the components of a Hybrid Fiber Coaxial (HFC) cable system. The student will be able to:
40.01	Define hybrid fiber-coax (HFC) and its components (e.g., telecom center, Optical Transport Network (OTN), distributions network, and customer's premises).
40.02	Describe the purpose and function of the various network devices (e.g., Passive device and Active devices).
40.03	Define in basic terms the various cable system frequency allocations (e.g., Reverse, Forward, and Two-way frequency).
40.04	Describe cable system services sources (e.g., Off-air or Over-the air (OTA) feeds, Studio feeds, Satellite feeds, Community access/public, education, and government (PEGs), and Local Origination (LO).
40.05	Describe cable system premium services (e.g., Impulse pay per view (IPPV), Video on Demand (VoD), Interactive services – Smart Homes, and Premium services (i.e., HBO, Showtime).

CTE Standards and Benchmarks

40.06	Describe cable system digital services (e.g., High-speed data installation, Online gaming, Telephony, Digital video).
40.07	Describe competitive services (e.g., digital subscriber line (DSL), FiOS, Satellite delivery (e.g., DirecTV), broadband wireless, and telephone company).
40.08	Define coaxial drop cable physical and electrical properties (e.g., Impedance, Frequency characteristics, coaxial drop cable construction, sizes, and attenuation).
40.09	Describe in basic terms optical fiber types and properties.
40.10	Describe the effects of aspect ratio mismatch.
40.11	Define navigation devices/interfaces (e.g., remote control, parental control, Blaster, game consoles, home theater receiver, video switches, Slingbox, untethered devices, telephones, and personal computers (PCs)).

**Florida Department of Education
Student Performance Standards**

Course Title: Telecommunication Technology 4
Course Number: 8730240
Course Credit: 1

Course Description:

This course covers competencies in site requirements, the use of tables and charts, worksite plans, and twisted pair design.

CTE Standards and Benchmarks

41.0 Demonstrate proficiency in site requirements and considerations. The student will be able to:

41.01 Demonstrate knowledge of data communication test equipment.

41.02 Demonstrate knowledge of telecommunications wiring systems.

41.03 Demonstrate knowledge of cable and LAN topology.

41.04 Demonstrate knowledge of hubs, switches, and routers.

41.05 Calculate and determine power requirements.

41.06 Calculate and determine requirements of the working environment.

41.07 Install, configure, and troubleshoot LAN cable systems (twisted pair, coax, or fiber).

41.08 Configure and troubleshoot patch bay, hubs, and transceivers.

42.0 Use tables and charts. The student will be able to:

42.01 Determine expected levels of resistance for wiring configurations.

42.02 Determine changes in resistance due to temperature changes.

42.03 Determine capacitance of a given cable configuration.

42.04 Demonstrate quick test methods using Quick Test Charts.

CTE Standards and Benchmarks

43.0 Prepare worksite plans. The student will be able to:

43.01 Draw site plans.

43.02 Review, evaluate and plan for site electrical considerations.

43.03 Draw cable runs (cut-sheet).

43.04 Evaluate and select wiring room.

44.0 Demonstrate proficiency in twisted pair design. The student will be able to:

44.01 Select correct cable for CAT5 installations.

44.02 Ensure cable rating at patch panels conforms to industry standards.

44.03 Test installed design to meet standards using test equipment.

45.0 Demonstrate advanced cable repair techniques. The student will be able to: (Optional)

45.01 Prepare buried cable for splicing.

45.02 Splice buried cable.

45.03 Make various closure devices for spliced buried cable.

45.04 Prepare aerial cable for splicing.

45.05 Splice aerial cable.

45.06 Make various closure devices for spliced aerial cable.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Program Title: Journalism and Multimedia
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8771101
CIP Number	0609010000
Grade Level	9-12
Program Length	4 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	SkillsUSA
SOC Codes (all applicable)	27-3041 – Editors 27-4021 -- Photographers 43-9031 -- Desktop Publishers
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The purpose of this program is to prepare students for employment as writers, editors, and multimedia journalists (SOC 27-3041, 27-4021). This program provides a medium whereby the student will be given the opportunity for practical hands-on experiences that incorporate academic skills into a real life situation.

The program familiarizes individuals with journalistic writing, script writing, graphic communications, desktop publishing, multimedia production, photojournalism, and investigative reporting.

The presentation of subject matter should incorporate team teaching. Activities should utilize a rotational type format so that the student is exposed and reinforced academically and vocationally for each outcome.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 4 (four) credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8203000	Foundations of Journalism	ENGLISH 1 @2 @4 JOURNALISM 1 @2 @4 MG ENGLISH C	1 credit	27-3041	2	CT
8771110	Media Production	TV PRO TEC @ 7 G PHOTOG @ 7 G COMM ART @ 7 G MG ENG \$C BUS ED \$1 \$2 \$4 ENGLISH 1 @2 @4 JOURNALISM 1 @2 @4	1 credit	27-3041	2	CT
8209510	Digital Design 1	BUS ED 1 @2 CLERICAL @7 7G COMM ART @7 7G COMP SCI 6@2 MANAG SUPV 7G SECRETAR 7 G TC COOP ED @7 ELECT DP @7 G ENG & TEC ED 1 @ 2	1 credit	43-9031	3	CT
8203001	Photojournalism	PHOTOG @ 7 G JOURNALISM 1 @2 @4 BUS ED 1 @ 2 ENGLISH 1 @2 @4	1 credit	27-4021	2	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

Foundations of Journalism

- 01.0 Demonstrate fundamental skills in the use of the writing process for varied journalistic media.
- 02.0 Demonstrate fundamental use of production skills (e.g., layout design, ad design, storyboarding) for varied mass communication documents or electronic media.
- 03.0 Demonstrate awareness of the history and evolution of journalism and the responsible and ethical use of information (e.g., First Amendment, copyright, intellectual freedom).
- 04.0 Demonstrate awareness of ethical issues (e.g., manipulation, misrepresentation, fraud) when addressing social, cultural, and political issues through print and non-print photojournalism.
- 05.0 Demonstrate fundamental use of organization and management techniques related to production of journalistic media (e.g., team building, leadership, business skills, time management, and task organization).
- 06.0 Demonstrate fundamental use of technology for research, production, and dissemination of journalistic media.
- 07.0 Analyze varied journalistic documents or electronic media.
- 08.0 Demonstrate awareness of varied careers in journalism.

Media Production

- 09.0 Produce writing appropriate to journalistic media.
- 10.0 Organize and utilize production modes appropriate to journalistic media, including desktop publishing, keyboarding, photography, commercial art, and television production.
- 11.0 Plan a set for television production.
- 12.0 Perform lighting activities for a planned production.
- 13.0 Demonstrate correct use of basic equipment used in television production.
- 14.0 Demonstrate ability to identify different types of script copy.
- 15.0 Demonstrate ability to write script in broadcast style.
- 16.0 Perform electronic/desktop publishing operations.
- 17.0 Demonstrate knowledge of electronic/desktop publishing concepts.
- 18.0 Demonstrate various techniques to create podcasts.
- 19.0 Analyze, evaluate and communicate information effectively through social media platforms.

Digital Design 1

- 20.0 Demonstrate knowledge of digital publishing concepts.
- 21.0 Demonstrate knowledge of basic digital imaging.
- 22.0 Demonstrate proficiency in the safe and ethical use of the Internet to locate information.
- 23.0 Identify project requirements, define project planning, and understand the design process.
- 24.0 Perform page layout and measurement activities.
- 25.0 Demonstrate an understanding of color and its role in digital design.

- 26.0 Demonstrate a basic understanding of typography.
- 27.0 Demonstrate an understanding of elements and principles of design.
- 28.0 Demonstrate basic skill in digital photography.
- 29.0 Demonstrate skills in the use of raster software applications.
- 30.0 Demonstrate basic skills in the use of vector software applications.
- 31.0 Demonstrate basic technical skills using a desktop publishing application.
- 32.0 Develop an awareness of the emergent technologies associated with digital design.
- 33.0 Demonstrate understanding in page layout using desktop publishing applications.
- 34.0 Demonstrate an understanding of career opportunities and requirements in the field of digital design.

Photojournalism

- 35.0 Demonstrate understanding of the history of photojournalism.
- 36.0 Identify and explain the central ethical principles supporting the integrity of photojournalist.
- 37.0 Demonstrate an understanding the production process.
- 38.0 Demonstrate understanding of intellectual property rights, copyright laws and plagiarism as each applies to creative assets.
- 39.0 Operate parts of a camera system.
- 40.0 Demonstrate use of camera support equipment.
- 41.0 Take basic photographs.
- 42.0 Take basic video.
- 43.0 Organize and edit photos.
- 44.0 Organize and edit videos.
- 45.0 Develop a professional digital portfolio of work.

**Florida Department of Education
Student Performance Standards**

Course Title: Foundations of Journalism
Course Number: 8203000
Course Credit: 1

Course Description:

This course is designed to develop basic entry-level skills required for careers in the writing and editing industry.

CTE Standards and Benchmarks

01.0	Demonstrate fundamental skills in the use of the writing process for varied journalistic media. The student will be able to:
01.01	Locate, gather, analyze, and evaluate written information for a variety of purposes, including research projects, real-world tasks, and self-improvement.
01.02	Select and use appropriate study and research skills and tools according to the type of information being gathered or organized, including almanacs, government publications, microfiche, news sources, and information services.
01.03	Analyze the validity and reliability of primary source information and use the information appropriately.
01.04	Synthesize information from multiple sources to draw conclusions.
01.05	Select and use appropriate prewriting strategies, such as brainstorming, graphic organizers, and outlining.
01.06	Draft and revise writing that:
	• is focused, purposeful, and reflects insight into the writing situation;
	• has an organizational pattern that provides for a logical progression of ideas;
	• has effective use of transitional devices that contribute to a sense of completeness;
	• has support that is substantial, specific, relevant, and concrete;
	• demonstrates a commitment to and involvement with the subject;
	• uses journalistic writing strategies as appropriate to the purpose of the paper;
	• demonstrates a mature command of language with precision of expression;
	• has varied sentence structure; and

CTE Standards and Benchmarks

	has few, if any, conventional errors in mechanics, usage, punctuation, and spelling.
01.07	Produce final documents that have been edited for:
	correct spelling;
	correct punctuation, including commas, colons, and common use of semicolons;
	correct capitalization;
	correct sentence formation;
	correct instances of possessives, subject/verb agreement, instances of noun/pronoun agreement, and the intentional use of fragments for effect; and
	correct formatting that appeals to readers, including appropriate use of a variety of graphics, tables, charts, and illustrations in both standard and innovative forms.
01.08	Write fluently for a variety of occasions, audiences, and purposes, making appropriate choices regarding style, tone, level of detail, and organization.
01.09	Make appropriate adjustments in language use for social, academic, and life situations, demonstrating sensitivity to gender and cultural bias.
02.0	Demonstrate fundamental use of production skills (e.g., layout design, ad design, storyboarding) for varied mass communication documents or electronic media. The student will be able to:
02.01	Organize information using appropriate systems.
02.02	Recognize production elements that contribute to the effectiveness of a specific medium.
03.0	Demonstrate awareness of the history and evolution of journalism and the responsible and ethical use of information (e.g., First Amendment, copyright, intellectual freedom). The student will be able to:
03.01	Understand that laws control the delivery and use of media to protect the rights of authors and the rights of media owners.
04.0	Demonstrate awareness of ethical issues (e.g., manipulation, misrepresentation, fraud) when addressing social, cultural, and political issues through print and non-print photojournalism. The student will be able to:
04.01	Determine main concept and supporting details in order to analyze and evaluate non-print media messages.
04.02	Understand factors that influence the effectiveness of nonverbal cues used in non-print media, such as the viewer's past experiences and preferences, and the context in which the cues are presented.
04.03	Understand the use of images and sounds to elicit the reader's emotions in nonfiction.
05.0	Demonstrate fundamental use of organization and management techniques related to production of journalistic media (e.g., team

CTE Standards and Benchmarks

building, leadership, business skills, time management, and task organization). The student will be able to:

05.01 Create a collaborative and comprehensive plan which addresses specific events, products, or projects either personally or for the work place.

05.02 Analyze the managerial skills necessary for decision making in different work-related situations.

05.03 Demonstrate the ability to cooperatively work in various settings across diverse populations.

05.04 Select and use appropriate listening strategies according to the intended purpose, such as solving problems, interpreting and evaluating the techniques and intent of presentation, and taking action in career-related situations.

05.05 Use effective strategies for informal and formal discussions, including listening actively and reflectively, connecting to and building on the ideas of a previous speaker, and respecting the viewpoints of others.

05.06 Apply oral communication skills to interviews, group presentations, formal presentations, and impromptu situations.

06.0 Demonstrate fundamental use of technology for research, production, and dissemination of journalistic media. The student will be able to:

06.01 Select and use a variety of electronic media, such as the Internet, information services, and desktop publishing programs, to create, revise, retrieve, and verify information.

07.0 Analyze varied journalistic documents or electronic media. The student will be able to:

07.01 Identify devices of persuasion and methods of appeal and their effectiveness.

07.02 Identify bias, prejudice, or propaganda in messages.

07.03 Understand specific ways in which language has shaped the reactions, perceptions, and beliefs of the local, national, and global communities.

07.04 Understand the subtleties of literary devices and techniques in the comprehension and creation of communication.

07.05 Critically analyze specific elements of mass media with regard to the extent to which they enhance or manipulate information.

08.0 Demonstrate awareness of varied careers in journalism.

**Florida Department of Education
Student Performance Standards**

Course Title: Media Production
Course Number: 8771110
Course Credit: 1

Course Description:

This course is designed to develop basic entry-level skills required for careers in the communications industry.

CTE Standards and Benchmarks	
09.0	Produce writing appropriate to journalistic media. The student will be able to:
09.01	Write headlines and captions for a variety of journalistic activities.
09.02	Identify the "who, what, when, where, and how" components of a news story.
09.03	Write a news story in acceptable journalistic style.
09.04	Write a sports article using news style and appropriate jargon.
09.05	Write an editorial of commendation, condemnation, or both, offering observations and/or criticisms.
09.06	Write a feature story that adheres to acceptable column style.in acceptable journalistic style.
09.07	Describe how copyright law pertains to professional and educational use of other writers' materials.
09.08	Write copy for a variety of journalistic media (television, radio, print, magazines, podcast, etc.)
10.0	Organize and utilize production modes appropriate to journalistic media, including desktop publishing, keyboarding, photography, commercial art, and television production. The student will be able to:
10.01	Identify the principles of layout design.
10.02	Identify the basic elements necessary to produce a good photograph.
10.03	Describe how the use of photograph or photograph idea extends the written word.
10.04	Identify equipment appropriate for production of a variety of journalistic mediums.
10.05	Identify principles of advertising.

CTE Standards and Benchmarks

10.06 Identify proofreading symbols.

11.0 Plan a set for television production. The student will be able to:

11.01 Prepare television set for a planned production.

11.02 Draw and design a set plan to scale.

11.03 Select and arrange state props.

11.04 Utilize hand tools to construct scene components.

11.05 Inspect and repair scenery, as needed.

12.0 Perform lighting activities for a planned production. The student will be able to:

12.01 Describe types of lighting fixtures.

12.02 Identify parts of lighting fixtures.

12.03 Perform special effects lighting.

12.04 Set-up appropriate lighting for a production.

12.05 Describe functions of master lighting panel and dimmer board.

12.06 Analyze lighting needs for production.

13.0 Demonstrate correct use of basic equipment used in television production. The student will be able to:

13.01 Record and play video

13.02 Demonstrate the steps necessary to set up, turn on, and operate a video camera.

13.03 Demonstrate picture composition.

13.04 Identify, select and demonstrate use of an appropriate microphone.

13.05 Identify the qualities of a good audio track.

13.06 Demonstrate basic television lighting.

13.07 Explain the care, storage and use of television hardware and software.

CTE Standards and Benchmarks

14.0 Demonstrate ability to identify different types of script copy. The student will be able to:

14.01 Identify scripts by format.

14.02 Define terminology used in multimedia script writing.

15.0 Demonstrate ability to write script in broadcast style. The student will be able to:

15.01 Plan and produce a storyboard.

15.02 Specify steps leading to broadcast scripts.

15.03 Write broadcast scripts.

16.0 Perform electronic/desktop publishing operations. The student will be able to:

16.01 Identify software specifications and functions.

16.02 Identify the skills needed by an electronic desktop publisher.

16.03 Prepare computer printer and scanner for operations.

16.04 Define commonly used terms in graphic communications.

17.0 Perform design and layout operations. The student will be able to:

17.01 Identify characteristics of type, type families, type series, and type styles.

17.02 Identify elements of design.

17.03 Prepare rough layout design.

17.04 Design and layout page elements electronically.

17.05 Check and compare rough layout design to completed layout for final proofing.

18.0 Demonstrate various techniques to create podcasts. The student will be able to:

18.01 Understand the various purposes of podcasts.

18.02 Select appropriate topics for audience engagement.

18.03 Plan and write a script

CTE Standards and Benchmarks

18.04	Apply oral communication skills to record podcast.
18.05	Utilize appropriate multimedia editing software to prepare podcast for publishing.
18.06	Publish podcast to an online platform.
19.0	Analyze, evaluate and communicate information effectively through social media platforms. The student will be able to:
19.01	Understand how the development of social media has shaped online media and communication.
19.02	Use appropriate writing strategies for different social media platforms.
19.03	Engage in conversation effectively through social media
19.04	Evaluate the reliability of sources and determine if the information is valid
19.05	Promote relevant information from multiple sources and build community to expand audience reach.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Design 1
Course Number: 8209510
Course Credit: 1

Course Description:

This course is designed to develop basic entry-level skills required for careers in the digital publishing industry. The content includes computer skills; digital publishing concepts and operations; layout, design, and measurement activities; decision-making activities; and digital imaging.

CTE Standards and Benchmarks	
20.0	Demonstrate knowledge of digital publishing concepts. The student will be able to:
20.01	Define the terms commonly used in digital publishing.
20.02	Identify the characteristics of paper (e.g., weight and point).
20.03	Apply different types of color (e.g., RGB, CMYK, Pantone Color Matching System, and HEX).
20.04	Identify software used in digital publishing.
20.05	Differentiate between raster (bitmap) and vector graphic images.
20.06	Compare and contrast image formats (e.g., BMP, EPS, GIF, JPEG, PDF, PNG, RAW, and TIF).
21.0	Demonstrate knowledge of basic digital imaging. The student will be able to:
21.01	Demonstrate proper use of scanners, digital cameras, and various input devices.
21.02	Identify the attributes of line art, grayscale, duotone, spot color and the four-color process.
22.0	Demonstrate proficiency in the safe and ethical use of the Internet to locate information. The student will be able to:
22.01	Understand the principles of copyright.
22.02	Identify and apply Copyright Fair Use guidelines.
22.03	Demonstrate an understanding of safe and ethical Internet usage.
23.0	Identify project requirements, define project planning, and understand the design process. The student will be able to:

23.01	Identify the purpose, audience, and the needs of the audience for the preparation of design projects.
23.02	Research and describe the implications of audience, purpose/message, and time constraints relative to a design project.
23.03	Determine project specifications.
23.04	Define design criteria and design constraints.
23.05	Produce basic thumbnail sketches and rough designs.
23.06	Identify project management tasks and responsibilities.
24.0	Perform page layout and measurement activities. The student will be able to:
24.01	Determine the appropriate type of basic layout for a specified problem (e.g., audience and purpose).
24.02	Identify distinct components in a layout (e.g., headlines, subheads, and body copy).
24.03	Demonstrate basic use of typography (e.g., visual hierarchy, proximity, alignment, contrast, and repetition).
24.04	Compare and contrast units of measurement (e.g., inches, centimeters, millimeters, points, picas, and pixels).
24.05	Produce a variety of design layouts (e.g., flyers, postcards, brochures, business cards, and letterhead).
24.06	Incorporate clip art, images, borders, and other special effects into a layout.
24.07	Select the appropriate color format and resolution for a variety of purposes (e.g., web, print).
25.0	Demonstrate an understanding of color and its role in digital design. The student will be able to:
25.01	Understand the color wheel and its uses.
25.02	Describe the spectral colors in the visible light spectrum.
25.03	Define and explain the terminology related to color (e.g., Chroma, lightness, saturation, hue, intensity, luminance/value, shade, and tint).
25.04	Describe the difference between additive and subtractive color mixing.
25.05	Compare and contrast RGB and CYMK color models as used in digital design.
25.06	Demonstrate the application of color theory to design practices.
26.0	Demonstrate a basic understanding of typography. The student will be able to:

26.01	Define and describe the terminology related to character and line spacing (e.g., leading, kerning, tracking, baseline shift, and ligature).
26.02	Identify the characteristics and psychology of type, type families, type series, and type styles.
26.03	Understand the installation and application of fonts.
27.0	Demonstrate an understanding of elements and principles of design. The student will be able to:
27.01	Identify the elements of design (line, shape, mass, color, texture, etc.).
27.02	Identify the principles of design (variety, movement, emphasis, balance, space, etc.).
28.0	Demonstrate basic skill in digital photography. The student will be able to:
28.01	Demonstrate knowledge of ethics related to digital images/imaging; examine legal and content-related issues.
28.02	Demonstrate the operation of a digital camera (typical features/modes).
28.03	Apply effective design principles in digital photography compositions (e.g., rule of thirds).
28.04	Develop an understanding of metadata and the digital photography workflow.
29.0	Demonstrate skills in the use of raster software applications. The student will be able to:
29.01	Demonstrate basic knowledge of the tools and techniques for using a raster-based software application.
29.02	Demonstrate skill in importing, transforming and cropping images.
29.03	Create and edit images/photographs using digital imaging software (e.g., layers, image editing, adjustments, filters, and selections).
29.04	Demonstrate skill in raster image manipulation, color correction, and special effects.
29.05	Demonstrate an understanding of image resolution and compression factors such as transmission speed, color reduction, and delivery media parameters.
30.0	Demonstrate basic skills in the use of vector software applications. The student will be able to:
30.01	Demonstrate basic knowledge of the tools and techniques for using vector software applications.
30.02	Create and edit various illustrations using vector software (e.g., line art, drawing basics, transforming/applying effects to objects, painting, type and type effects, and layers).
31.0	Demonstrate basic technical skills using a desktop publishing application. The student will be able to:
31.01	Determine the activities and implications of content preparation and proofreading.

31.02	Incorporate scanned and digital photographs into documents comprising a specified design (e.g., poster, brochure, card, and advertisement).
31.03	Proofread manually and digitally.
32.0	Develop an awareness of the emerging technologies associated with digital design. The student will be able to:
32.01	Compare and contrast emerging technologies relative to their role in digital design (e.g., wireless, cloud-based, mobile, portable devices, and kiosks).
32.02	Describe social media as a form of digital design.
32.03	Describe the emergent and evolving nature of software applications used in interactive design.
32.04	Explain how the use of advanced image sensing devices have altered the manner in which communication takes place, especially those utilizing Quick Response (QR) Codes and other forms of two-dimensional bar coding techniques.
33.0	Demonstrate understanding in page layout using desktop publishing applications. The student will be able to:
33.01	Design a document using grids and formats.
33.02	Produce documents integrating the Elements and Principles of Art and Design.
34.0	Demonstrate an understanding of career opportunities and requirements in the field of digital design. The student will be able to:
34.01	Discuss individual interests related to a career in digital design.
34.02	Identify the skills required of a digital designer.
34.03	Explore career opportunities in the field of digital design.
34.04	Explore secondary and post-secondary educational opportunities related to digital design.
34.05	Identify job search platforms.

**Florida Department of Education
Student Performance Standards**

Course Title: Photojournalism
Course Number: 8203001
Course Credit: 1

Course Description:

This course is designed to introduce students to basic photojournalism techniques, including camera operation, lighting, composition, photo manipulation, and storytelling for print and online publications. Through this course, the students will become familiar with Digital Single Lens Reflex (DSLR) and as well as cameras on mobile devices and learn how to create authentic journalistic documents. An emphasis will be placed on using the camera as a reporting tool and will cover industry expectations for professional photojournalists.

CTE Standards and Benchmarks

35.0 Demonstrate understanding of the history of photojournalism. The student will be able to:

35.01 Demonstrate knowledge of photography as an invention.

35.02 Demonstrate knowledge of early uses of photography in journalism.

35.03 Describe the mechanics of early photographic systems.

35.04 Demonstrate understanding of the differences between photojournalism and commercial or art photography,

36.0 Identify and explain the central ethical principles supporting the integrity of photojournalist. The student will be able to:

36.01 Understand how staging and manipulation can negatively affect a journalist credibility

37.0 Demonstrate an understanding the production process. The student will be able to:

37.01 Identify the job titles associated with photojournalism.

37.02 Identify various tools and equipment used in photojournalism.

37.03 Use speed and efficiency concepts (workflow and deadline).

37.04 Use basic communication skills effectively with other staff members.

37.05 Identify the stages of production.

37.06 Understand photojournalism terms and jargon.

CTE Standards and Benchmarks

38.0 Demonstrate understanding of intellectual property rights, copyright laws and plagiarism as each applies to creative assets. The student will be able to:

38.01 Examine the limits and expectations of copyright protection.

38.02 Analyze the concepts of “fair use” and “fair dealing.”

38.03 Demonstrate understanding of the transfer and licensing of creative works.

38.04 Articulate the use of “exclusive rights” to intellectual creations.

38.05 Demonstrate the use of digital watermarking and embedding file information.

39.0 Operate parts of a camera system. The student will be able to:

39.01 Identify basic camera anatomy (e.g., lens, battery, flash, shutter, display).

39.02 Remove and attach standard lenses.

39.03 Charge and connect batteries.

39.04 Identify, insert and format recording media.

39.05 Use basic camera functions (e.g., power, date/time and menu navigation).

39.06 Set image format and size.

39.07 Use camera auto, program, and scene modes.

39.08 Use camera viewfinder and LCD displays for image review.

39.09 Use basic lens controls (auto, manual focus, and zoom).

39.10 Use image International Standards Organization (ISO) and metering functions.

39.11 Use white balance operations.

39.12 Use shutter and aperture priority modes.

39.13 Set proper f-stop and shutter speeds.

39.14 Use camera drive modes such as delayed, multiple and remote.

CTE Standards and Benchmarks

39.15 Operate a camera mounted flash and use fill and red-eye reduction.

40.0 Demonstrate use of camera support equipment. The student will be able to:

40.01 Perform basic camera handholds in portrait and landscape.

40.02 Identify basic components of a tripod (head, sticks, and spreader).

40.03 Assemble fluid head and friction head tripod components.

40.04 Setup and level tripod for use in portrait and landscape.

40.05 Attach camera to support equipment.

40.06 Identify auxiliary support devices.

41.0 Take basic photographs. The student will be able to:

41.01 Apply camera care and maintenance principles.

41.02 Define the subject of a photograph.

41.03 Identify available light sources.

41.04 Demonstrate understanding of photo composition techniques.

41.05 Select an appropriate lens for subject (wide, tight, macro).

41.06 Take portrait photographs using available light.

41.07 Take action photographs using available light.

41.08 Create a series/sequence of photographs around a defined subject.

42.0 Take basic video. The student will be able to:

42.01 Apply care and maintenance principles to digital devices

42.02 Define the subject of a video.

42.03 Identify and utilize available light sources.

42.04 Demonstrate understanding of composition techniques.

CTE Standards and Benchmarks

42.05	Demonstrate understanding of A-Roll and B-Roll.
42.06	Perform pre-production sound checks.
42.07	Establish appropriate recording conditions.
43.0	Organize and edit photos. The student will be able to:
43.01	Import photographs from various media sources.
43.02	Define and create keyword tags for imported images.
43.03	Organize, rate, label and rename image collections.
43.04	Create and modify image metadata.
43.05	Identify parts of the software interface (menus and palettes).
43.06	Use photo editing software to perform image edits for specific multimedia platforms
44.0	Organize and edit videos. The student will be able to:
44.01	Import video from various media sources.
44.02	Define and create keyword tags for imported videos.
44.03	Organize, rate, label and rename video collections.
44.04	Create and modify image metadata.
44.05	Identify parts of the software interface (menus and palettes).
44.06	Use online editing software to perform edits for specific multimedia platforms.
45.0	Develop a professional digital portfolio of work. The student will be able to:
45.01	Identify elements of a professional photojournalism portfolio.
45.02	Select quality work to include in portfolio and justify choices.
45.03	Organize, maintain, and update portfolio for specific uses.
45.04	Explore the use of Internet websites for portfolio publication.

CTE Standards and Benchmarks

45.05 Determine the format for a portfolio.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Program Title: Commercial Photography Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8772000
CIP Number	0650040600
Grade Level	9-12
Program Length	11 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	SkillsUSA
SOC Codes (all applicable)	27-4021 – Photographers 51-9151 – Photographic Process Workers and Processing Machine Operators
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment as photographers.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, communication skills, leadership skills, human relations and employability skills, safe and efficient work practices, and the use of cameras and laboratory film-processing techniques in portrait, commercial and industrial applications with emphasis on composition and color dynamics, contact printing, enlarging and developing film, and use, care, and maintenance of photographic equipment.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of eleven (11) credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8772010	Commercial Photography Technology 1	PHOTOG @7 7G	1 credit	51-9151	2	CT
8772020	Commercial Photography Technology 2		1 credit	51-9151	2	CT
8772030	Commercial Photography Technology 3		1 credit	51-9151	2	CT
8772040	Commercial Photography Technology 4		1 credit	51-9151	2	CT
8772050	Commercial Photography Technology 5		1 credit	51-9151	2	CT
8772060	Commercial Photography Technology 6		1 credit	51-9151	2	CT
8772070	Commercial Photography Technology 7		1 credit	51-9151	2	CT
8772080	Commercial Photography Technology 8		1 credit	27-4021	2	CT
8772090	Commercial Photography Technology 9		1 credit	27-4021	2	CT
8772091	Commercial Photography Technology 10		1 credit	27-4021	2	CT
8772092	Commercial Photography Technology 11		1 credit	27-4021	2	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Perform laboratory skills.
- 02.0 Manage a photographic business.
- 03.0 Control exposures (35mm camera).
- 04.0 Take basic photographs (35mm camera).
- 05.0 Finish photographs.
- 06.0 Apply lighting techniques.
- 07.0 Reproduce photographic media.
- 08.0 Demonstrate appropriate communication skills.
- 09.0 Reproduce transparencies and internegatives.
- 10.0 Operate various format cameras.
- 11.0 Process color images.
- 12.0 Procure color photographs.
- 13.0 Take studio photographs.
- 14.0 Produce media presentations.
- 15.0 Use digital imaging.
- 16.0 Operate various format cameras.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Photography Technology 1
Course Number: 8772010
Course Credit: 1

Course Description:

This course is one in a series of eleven courses. This is the introductory course in 35mm Camera Operation. The use of various light meters in the 35mm cameras as well as hand held light meters will be reviewed. Focusing systems are considered. Film types are compared to lighting conditions for proper exposures. Film loading and unloading are considered. The reciprocal value of apertures and shutter speeds are examined.

CTE Standards and Benchmarks

01.0 Perform laboratory skills. The student will be able to:

01.01 Mix developers and other chemicals.

01.02 Hand-process black and white film.

01.03 Print black and white photographs.

01.04 Process black and white paper.

02.0 Manage the photographic business. The student will be able to:

02.01 Apply communication skills.

02.02 Apply human relation skills.

02.03 Set rates for photographic work.

02.04 Maintain shop records and files.

02.05 Maintain presentational portfolio.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Photography Technology 2
Course Number: 8772020
Course Credit: 1

Course Description:

This course is one in a series of eleven courses. The guidelines of composing within the photographic frame are discussed. Posing one or more subjects for portraiture in the studio is considered. The guidelines for setting up a still life are introduced. Other rules for arranging groups, determining format, color harmony, and perspective are introduced.

CTE Standards and Benchmarks	
03.0	Control exposures (35mm camera). The student will be able to:
03.01	Set appropriate f-stop and shutter speeds.
03.02	Select appropriate film type.
04.0	Take basic photographs (35mm camera). The student will be able to:
04.01	Apply camera care and maintenance principles.
04.02	Compose photographs.
04.03	Take still photographs.
04.04	Take action photographs.
05.0	Finish photographs. The student will be able to:
05.01	Mount photographs.
05.02	Mat/frame photographs.
06.0	Apply lighting techniques. The student will be able to:
06.01	Take photographs with available light.
06.02	Take photographs with electronic strobe.

CTE Standards and Benchmarks

06.03 Take photographs with photo-flood lighting.

07.0 Reproduce photographic media. The student will be able to:

07.01 Copy prints.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Photography Technology 3
Course Number: 8772030
Course Credit: 1

Course Description:

This is one course in a series of eleven courses. This course is designed to expose the student to lighting techniques, the coping of prints and employability skills.

CTE Standards and Benchmarks	
02.0	Manage the photographic business. The student will be able to:
02.01	Apply communication skills.
02.02	Apply human relation skills.
02.03	Set rates for photographic work.
02.04	Maintain shop records and files.
02.05	Maintain presentational portfolio
06.0	Apply lighting techniques. The student will be able to:
06.01	Take photographs with available light.
06.02	Take photographs with electronic strobe.
06.03	Take photographs with photo-flood lighting.
07.0	Reproduce photographic media. The student will be able to:
07.01	Copy prints.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Photography Technology 4
Course Number: 8772040
Course Credit: 1

Course Description:

This is one course in a series of eleven courses. This course is designed to expose the student in advanced instruction in the use of commercial cameras and reproduce photographic media.

CTE Standards and Benchmarks	
09.0	Reproduce transparencies and internegatives. The student will be able to:
09.01	Scan transparencies.
09.02	Scan internegatives.
10.0	Operate various format cameras. The student will be able to:
10.01	Use view cameras.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Photography Technology 5
Course Number: 8772050
Course Credit: 1

Course Description:

This is one course in a series of eleven courses. This course is designed to expose the student in advanced instruction in the processing of color film and print color photographs.

CTE Standards and Benchmarks	
11.0	Process color images. The student will be able to:
11.01	Hand process color negatives and transparencies. (optional)
11.02	Process color negatives and transparencies. (optional)
11.03	Download images to a computer.
11.04	Save images in a computer to an external storage device.
12.0	Procure color photographs. The student will be able to:
12.01	Process color paper. (optional)
12.02	Print color negatives. (optional)
12.03	Print color negatives using color analyzer. (optional)
12.04	Purchase color mediums.
12.05	Calibrate a computer monitor.
12.06	Analyze a color print for correct color and contrast.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Photography Technology 6
Course Number: 8772060
Course Credit: 1

Course Description:

This is one course in a series of eleven courses. This course covers the operation of various format cameras and to demonstrate appropriate communication skills.

CTE Standards and Benchmarks

08.0 Demonstrate appropriate communication skills. The student will be able to:

08.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.

08.02 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.

08.03 Read and follow written and oral instructions.

10.0 Operate various format cameras. The student will be able to:

10.02 Use 2¼ format cameras.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Photography Technology 7
Course Number: 8772070
Course Credit: 1

Course Description:

This is one course in a series of eleven courses. The uses of studio lights are reviewed for commercial photography. Formal portraiture lighting, as well as electronic strobes are examined.

CTE Standards and Benchmarks

08.0	Demonstrate appropriate communication skills. The student will be able to:
08.01	Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
08.02	Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
08.03	Read and follow written and oral instructions.
13.0	Take studio photographs. The student will be able to:
13.01	Take portraits.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Photography Technology 8
Course Number: 8772080
Course Credit: 1

Course Description:

This is one course in a series of eleven courses. This course covers the methods and practices currently used for digital photography to include the computer usage and software to manipulate photographs.

CTE Standards and Benchmarks

15.0 Use digital imaging. The student will be able to:

15.01 Use basic photographic computer skills.

15.02 Use a professional imaging program.

15.03 Use a flatbed and film scanner.

15.04 Output photographic quality images using a digital printer.

15.05 Use digital camera.

Florida Department of Education
Student Performance Standards

Course Title: Commercial Photography Technology 9
Course Number: 8772090
Course Credit: 1

Course Description:

This is one course in a series of eleven courses. This course covers aspects of commercial photography.

CTE Standards and Benchmarks	
13.0	Take studio photographs. The student will be able to:
13.02	Take commercial photographs.

Florida Department of Education
Student Performance Standards

Course Title: Commercial Photography Technology 10
Course Number: 8772091
Course Credit: 1

Course Description:

This is one course in a series of eleven courses. This course covers methods of preparing media presentations.

CTE Standards and Benchmarks	
14.0	Produce media presentations. The student will be able to:
14.01	Prepare script for a slide presentation.
14.02	Shoot slides for a slide presentation.
14.03	Produce a slide presentation.

**Florida Department of Education
Student Performance Standards**

Course Title: Commercial Photography Technology 11
Course Number: 8772092
Course Credit: 1

Course Description:

This is one course in a series of eleven courses. This course covers methods of preparing media presentations and the basics of entrepreneurship.

CTE Standards and Benchmarks	
14.0	Produce media presentations. The student will be able to:
14.04	Prepare script for a video presentation.
14.05	Shoot a video presentation.
14.06	Produce a video presentation.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

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English language learners communicate for social and instructional purposes within the school setting. ELD.K12.ELL.SI.1

English Language Development (ELD) Standards Special Notes:

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SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular course or a modified course. If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete a Career and Technical Education (CTE) course. The student should work on different competencies and new applications of competencies each year toward completion of the CTE course. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Audio Production
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Secondary – Career Preparatory

Program Number	8772300
CIP Number	0650060216
Grade Level	9-12
Program Length	7 credits
Teacher Certification	Refer to the Program Structure section.
CTSO	SkillsUSA
SOC Codes (all applicable)	27-3011 – Radio and Television Announcers 27-4011 – Audio and Video Equipment Technicians 27-4012 – Broadcast Technicians 27-4014 – Sound Engineering Technicians
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as radio and television announcers, audio and video equipment technicians, sound engineering technicians, and broadcast technicians.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, communication skills, leadership skills, human relations and employability skills; safe and efficient work practices; announcing and moderating programs; preparing copy, programming, and operating audio broadcast equipment to support the production of materials or programs.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of seven (7) credits.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the secondary program structure:

Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
8772310	Digital Audio Production 1	TEC ED 1 @ 2 ENG&TEC ED1@2 TEC ELEC ¶ 7 ¶ G TV PRO TEC @7 7G	1 credit	27-3011	2	CT
8772320	Digital Audio Production 2		1 credit	27-4011	2	CT
8772330	Digital Audio Production 3		1 credit	27-4011	2	CT
8772340	Digital Audio Production 4		1 credit	27-4014	2	CT
8772350	Digital Audio Production 5		1 credit	27-4014	2	CT
8772360	Digital Audio Production 6		1 credit	27-4012	2	CT
8772370	Digital Audio Production 7		1 credit	27-4012	2	CT

(Graduation Requirement Codes: CT= Career & Technical Education, EQ= Equally Rigorous Science, EC= Economics, MA= Mathematics, PL= Personal Financial Literacy)

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of school and classroom procedures.
- 02.0 Demonstrate the ability to operate an audio console.
- 03.0 Demonstrate knowledge of production writing.
- 04.0 Demonstrate news-writing skills.
- 05.0 Demonstrate appropriate voice-over skills.
- 06.0 Demonstrate appropriate on-air skills.
- 07.0 Demonstrate the appropriate broadcast speaking manner.
- 08.0 Demonstrate the set up and configuration of a computer for audio applications.
- 09.0 Understand the operation of basic reproduction, reinforcement and recording audio equipment.
- 10.0 Demonstrate understanding of the requirements for set up and operation of a sound reinforcement system.
- 11.0 Demonstrate the application of control protocols and their relationship to equipment used in the music industry.
- 12.0 Demonstrate basic operation of a digital audio workstation.
- 13.0 Demonstrate basic digital production skills.
- 14.0 Demonstrate advanced digital production skills.
- 15.0 Perform transactions with music industry suppliers.
- 16.0 Plan, coordinate, and manage an audio broadcast or album.
- 17.0 Demonstrate knowledge of the legal issues related to copyright.
- 18.0 Demonstrate knowledge of current and future digital audio networking standards.
- 19.0 Demonstrate professionalism and employability skills.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Audio Production 1
Course Number: 8772310
Course Credit: 1

Course Description:

The course provides competencies in operating audio consoles, production writing, news writing, and voice over and on-air skills.

CTE Standards and Benchmarks	
01.0	Demonstrate knowledge of school and classroom procedures. The student will be able to:
01.01	Verbalize the rules and operational procedures of the school and classroom.
01.02	State the nature of instruction.
01.03	Identify what will be learned in relation to stated goals and existing job opportunities.
02.0	Demonstrate the ability to operate an audio console. The student will be able to:
02.01	Demonstrate an ability to control the audio console during the recording of a show or program; combine all the sound elements onto tape, compact disc or for broadcast.
02.02	Route outside organizations through the audio console or computer.
02.03	Demonstrate application of an appropriate recording mix while adjusting audio levels.
02.04	Demonstrate the ability to keep the program on time according to the production plan.
02.05	Perform to high standards in the role of audio console operator in varied format situations.
02.06	Demonstrate knowledge of the audio console signal flow.
03.0	Demonstrate knowledge of production writing. The student will be able to:
03.01	Explain the job of a copywriter and outline the elements of good copy and copy writing.
03.02	Demonstrate the ability to write commercial copy in its various forms.
03.03	Demonstrate the ability to write a production plan for a show.

CTE Standards and Benchmarks

03.04	Demonstrate the ability to write lyrics for a song or jingle.
03.05	Demonstrate the ability to write show intros, outros and bumpers.
04.0	Demonstrate news-writing skills. The student will be able to:
04.01	Differentiate between news, commentary, and editorials.
04.02	Demonstrate the ability to mark, edit, and present news in an acceptable manner.
04.03	Explain the various sources of news and how they are used.
04.04	List the elements that constitute news materials and evaluate them.
04.05	Demonstrate the ability to write news stories in broadcast style.
05.0	Demonstrate appropriate voice-over skills. The student will be able to:
05.01	Demonstrate the ability to read aloud in a professional broadcast manner.
05.02	Modify reading speed as required to properly complete the assignment in the allotted time.
05.03	Demonstrate the ability to receive and properly act upon direction given by the commercial producer.
05.04	Understand the concept of voice acting and playing a role while speaking.
05.05	Perform various assignments in a professional manner according to industry standards.
06.0	Demonstrate appropriate on-air skills. The student will be able to:
06.01	State the characteristics of various microphones and demonstrate the ability to use them.
06.02	Handle outside organizations through the console.
06.03	Demonstrate how to handle changes in show format during a recording or live broadcast.
06.04	Perform various assignments in a professional manner according to industry standards.
06.05	List the elements and procedures of log keeping.
07.0	Demonstrate the appropriate broadcast speaking manner. The student will be able to:
07.01	Identify and correct verbal deficiencies in self and others.

CTE Standards and Benchmarks

07.02	Demonstrate the ability to breathe properly, control voice projection, volume, and resonance, and vary tone, pitch and pacing.
07.03	Articulate and pronounce words according to accepted standards.
07.04	Read aloud in a professional broadcast manner.
07.05	Outline the qualifications and requirements of an announcer.
07.06	Demonstrate development of the skills related to announcing, the various techniques of delivery and procedures according to accepted standards.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Audio Production 2
Course Number: 8772320
Course Credit: 1

Course Description:

This course provides competencies in the set up and configuration of a computer for audio applications and the operation of audio equipment.

CTE Standards and Benchmarks

08.0	Demonstrate the set up and configuration of a computer for audio applications. The student will be able to:
08.01	Install basic peripheral devices related to audio programs.
08.02	Install and configure software related to audio programs.
08.03	Demonstrate basic knowledge of computer system requirements.
08.04	Demonstrate basic knowledge of installing plug-ins or additional audio source material such as beats and/or samples.
08.05	Understand the signal flow of a digital audio workstation.
09.0	Understand the operation of basic reproduction, reinforcement and recording audio equipment. The student will be able to:
09.01	Assess the audio technology needs of a music production (pre-production).
09.02	Evaluate available audio resources.
09.03	Select and configure appropriate hardware and software.
10.0	Demonstrate understanding of the requirements for set up and operation of a sound reinforcement system. The student will be able to:
10.01	Demonstrate basic understanding of audio electronics (e.g., head room, biasing, distortion, equalization, frequency response).
10.02	Demonstrate basic understanding of acoustics.
10.03	Demonstrate knowledge of the principles of operation of analog/digital devices (block diagram).
10.04	Demonstrate basic understanding of audio signal flow in an analog or digital chain.

CTE Standards and Benchmarks

10.05	Formulate strategies for audio reinforcement of music productions.
10.06	Evaluate performance needs.
10.07	Evaluate technical needs as appropriate to given spaces.
10.08	Configure a sound reinforcement system to meet performance needs.
10.09	Analyze various audio qualities to achieve the proper sound mix.
10.10	Perform transactions with audio suppliers.
10.11	Design a plot for proper microphone and speaker selection and placement.
10.12	Evaluate the quality of a multi-track recording.
10.13	Interpret audio needs for the end user.
10.14	Supervise equipment operators.
10.15	Evaluate the quality of the final mix to industry standards.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Audio Production 3
Course Number: 8772330
Course Credit: 1

Course Description:

This course covers competencies in digital audio production.

CTE Standards and Benchmarks	
11.0	Demonstrate the application of control protocols and their relationship to equipment used in the music industry. The student will be able to:
11.01	Demonstrate an understanding of MIDI.
11.02	Utilize a computer and multiple MIDI instruments.
11.03	Record a single-sound track, add multiple-sound tracks, and change MIDI voices using the appropriate software.
12.0	Demonstrate basic operation of a digital audio workstation. The student will be able to:
12.01	Demonstrate knowledge of the digital audio workstation interface.
12.02	Create and arrange a multi-track project.
12.03	Create interest and effect using editing techniques.
12.04	Design and edit audio using a waveform editor.
12.05	Record audio directly to the digital audio workstation.
12.06	Demonstrate knowledge of mixing audio.
12.07	Demonstrate skill in using audio effects and plug-ins.
12.08	Prepare an audio project for finishing and final mix down.
12.09	Transfer audio files between various audio software applications.
12.10	Record finished audio to tape or compact disc and/or publish to a webpage.

CTE Standards and Benchmarks

13.0 Demonstrate basic digital production skills. The student will be able to:

13.01 Demonstrate understanding of digital audio storage concepts and digital storage media.

13.02 Demonstrate knowledge of and the ability to operate digital recording decks and other digital storage devices.

13.03 Demonstrate a working familiarity with and understanding of the function and operation of digital audio workstations.

13.04 Demonstrate the ability to edit, cut, erase, and insert sound utilizing various digital production techniques.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Audio Production 4
Course Number: 8772340
Course Credit: 1

Course Description:

This course provides competencies in the operation of basic reproduction, reinforcement and recording audio equipment.

CTE Standards and Benchmarks

09.0 Understand the operation of basic reproduction, reinforcement and recording audio equipment. The student will be able to:

09.04 Formulate strategies for producing multi-track recordings.

09.05 Evaluate production needs for microphone applications.

09.06 Demonstrate proficiency with multi-track, multi-channel mixing consoles.

09.07 Formulate strategies for digital editing.

09.08 Configure audio recording systems for optimal and appropriate use of signal processing equipment.

09.09 Engineer a recording session and prepare appropriate documentation.

09.10 Mix multi-track recordings.

09.11 Configure audio equipment for optimal musical mix.

09.12 Create a mixing plan.

09.13 Evaluate the quality of multi-track recordings.

09.14 Interpret audio needs for the end user.

09.15 Supervise equipment operators.

09.16 Evaluate the quality of the final mix according to industry standards.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Audio Production 5
Course Number: 8772350
Course Credit: 1

Course Description:

This course covers competencies in application of control protocols and their relationship to equipment used in the music industry and advanced digital production skills.

CTE Standards and Benchmarks

11.0	Demonstrate the application of control protocols and their relationship to equipment used in the music industry. The student will be able to:
11.04	Demonstrate proficiency in using MIDI instruments to record sounds using a digital sampler.
11.05	Demonstrate an understanding of MIDI and other control protocols in the recording studio.
11.06	Configure MIDI and other show control devices in a studio or live environment.
11.07	Troubleshoot MIDI and control communication problems.
14.0	Demonstrate advanced digital production skills. The student will be able to:
14.01	Demonstrate knowledge of and the ability to perform digital transfers of audio information between digital and analog production environments.
14.02	Demonstrate a working familiarity with and understanding of the function and operation of multi-track digital audio workstations.
14.03	Demonstrate an ability to edit, cut, erase, and insert sound utilizing various digital production techniques in the multi-track digital environment.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Audio Production 6
Course Number: 8772360
Course Credit: 1

Course Description:

This course provides competencies in advanced digital production skills and music industry supplier transactions.

CTE Standards and Benchmarks

14.0	Demonstrate advanced digital production skills. The student will be able to:
14.04	Demonstrate the knowledge and ability to connect hardware for a digital audio workstation, an audio console, and various recording equipment together using proper signal flow techniques, cables and connectors.
14.05	Demonstrate the knowledge and ability to record, edit and encode a surround-sound digital mix for use on DVD or SACD.
14.06	Demonstrate the knowledge and ability to encode audio for use on the web, for digital distribution, or for use in video and animation.
14.07	Demonstrate the knowledge and ability to create album cover art for CD and web distribution.
14.08	Demonstrate the knowledge and ability to create a blog page to post Internet broadcasts.
14.09	Demonstrate understanding of RSS feeds to be used to distribute digital content to Internet subscribers and to build an audience.
14.10	Formulate a marketing strategy for Internet broadcast, independent CD release, or Internet distribution.
15.0	Perform transactions with music industry suppliers. The student will be able to:
15.01	Research sources for necessary equipment, supplies, and educational materials.
15.02	Differentiate the levels of quality in the hierarchy of manufacturers, distributors and suppliers.
15.03	Evaluate purchasing agreements including bids, warranties, and maintenance contracts.
15.04	Evaluate the technical specifications of audio related products.
15.05	Execute the purchase of audio equipment, supplies and educational materials.

**Florida Department of Education
Student Performance Standards**

Course Title: Digital Audio Production 7
Course Number: 8772370
Course Credit: 1

Course Description:

This course provides competencies in planning, coordinating and managing an audio broadcast or album, as well as legal copyright issues.

CTE Standards and Benchmarks

16.0 Plan, coordinate and manage an audio broadcast or album. The student will be able to:

16.01 Define the program format and market demographics.

16.02 Present a project proposal with script or lyrics.

16.03 Develop a production schedule.

16.04 Create a plan to acquire all required production resources and talent.

16.05 Manage crew and staff during pre-production and production.

16.06 Determine post-production requirements.

16.07 Determine post-production activities.

16.08 Conduct client approval reviews of the project.

16.09 Archive and manage finished assets and originals.

16.10 Oversee broadcast/Internet distribution or physical distribution to the market.

16.11 Explain various techniques for program or segment promotion.

17.0 Demonstrate knowledge of the legal issues related to copyright. The student will be able to:

17.01 Define Federal Communications Commission (FCC) regulations pertaining to the broadcasting industry.

17.02 Define the laws and regulations pertaining to the ownership and control of media assets, license allocation, measurement and records, political broadcasts and lottery laws.

CTE Standards and Benchmarks

17.03	Define the laws and practices underlying rights, releases and permits.
17.04	Define the laws and practices underlying slander, libel, free speech and “truth in advertising” issues.
17.05	Define the laws and practices underlying indecent programming, obscenity and censorship issues.
17.06	Define the laws and practices underlying contract, labor, copyright and insurance/liability issues.
18.0	Demonstrate knowledge of current and future digital audio networking standards. The student will be able to:
18.01	Demonstrate the ability to plan and configure a basic digital audio network; include Audio over Ethernet (AoE).
18.02	Demonstrate knowledge of digital audio networking options (e.g., Audinate’s DANTE).
18.03	Demonstrate knowledge of networking and processing platforms for real-time professional audio applications (e.g., SoundGrid by Waves Audio).
18.04	Demonstrate knowledge of Multichannel Audio Digital Interface (MADI).
18.05	Demonstrate knowledge of AES50.
19.0	Demonstrate professionalism and employability skills. The student will be able to:
19.01	Demonstrate punctuality and promptness.
19.02	Demonstrate a strong work ethic and exemplify passion and motivation.
19.03	Demonstrate flexibility and teamwork when working in groups.
19.04	Demonstrate the ability to interact with staff, vendors, and performers in a professional manner.
19.05	Demonstrate knowledge of business processes and procedures.

Additional Information

Laboratory Activities

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**Florida Department of Education
Curriculum Framework**

Program Title: Pattern Making and Construction
Career Cluster: Arts, A/V Technology & Communication

CCC	
CIP Number	0450040702
Program Type	College Credit Certificate (CCC)
Program Length	21 credit hours
CTSO	FCCLA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the Fashion Design AS degree program (1450040700).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate leadership and organizational skills.
- 02.0 Demonstrate appropriate basic skills essential to working in design occupations.
- 03.0 Select and safely use tools and equipment.
- 04.0 Operate and maintain a conventional and/or commercial/industrial sewing machine.
- 05.0 Select and prepare materials.
- 06.0 Demonstrate skill in the construction of simple garments.
- 07.0 Create an original pattern for a garment.

**Florida Department of Education
Student Performance Standards**

Program Title: Pattern Making and Construction
CIP Number: 0450040702
Program Length: 21 credit hours

This certificate program is part of the Fashion Design AS degree program (1450040700). At the completion of this program, the student will be able to:

01.0	Demonstrate leadership and organizational skills. The student will be able to:
01.01	Demonstrate cooperation as a group member to achieve organizational goals.
01.02	Demonstrate confidence in leadership roles and organizational responsibilities.
02.0	Demonstrate appropriate basic skills essential to working in design services occupations. The student will be able to:
02.01	Identify the knowledge, skills, and attitudes necessary to perform occupational tasks (e.g., email, phone, conversations with clients).
02.02	Demonstrate the communication competencies required to perform occupational tasks.
03.0	Select and safely use tools and equipment. The student will be able to:
03.01	Identify the tools and equipment used in design services for sewing, cutting, measuring, fabric marking, and drafting.
03.02	Select the appropriate tools and equipment for assigned projects; explain why the selection is appropriate for the project.
03.03	Demonstrate proper and safe usage of tools and equipment.
03.04	Identify and demonstrate safety procedures for the use of conventional sewing machines and home sergers, and pressing equipment.
03.05	Explain the importance of observing Occupational Safety and Health Administration (OSHA) rules and regulations.
03.06	Clean and maintain various types of tools and equipment.
03.07	Keep an inventory record of tools, equipment, supplies, and materials using computer application software or other formatting options (e.g., written records).
03.08	Research innovations in materials and technologies that contribute to safeguards in the tools and equipment used in fashion design services.
03.09	Identify and apply drafting tools and techniques to a specific design services project (e.g., architectural ruler, light box, protractor, floor plans to scale, one-point perspective).
04.0	Operate and maintain a conventional and/or commercial/industrial sewing machine. The student will be able to:

04.01	Identify the parts of a sewing machine.
04.02	Select the needles that appropriate for different fabric types; identify the process and demonstrate needle insertion.
04.03	Identify the steps and demonstrate threading a sewing machine.
04.04	Diagram and demonstrate the ability to wind the bobbin, thread the bobbin case, and insert the bobbin correctly into a sewing machine.
04.05	Demonstrate straight stitching.
04.06	Identify and demonstrate stitch length and width selection.
04.07	Demonstrate utility and decorative stitches.
04.08	Identify the tension and demonstrate tension adjustment.
04.09	Demonstrate cleaning and lubricating the machine following manufacturer's instructions.
05.0	Select and prepare materials. The student will be able to:
05.01	Identify and match pattern pieces.
05.02	Read and interpret instructions and specifications.
05.03	Identify fabric content.
05.04	Prepare fabric.
05.05	Adjust patterns according to pattern/teacher instructions.
05.06	Lay out, pin, cut, and mark fabric according to a pattern or teacher instructions.
05.07	Demonstrate stay stitching and ease stitching.
05.08	Match grain lines and patterns according to a pattern or teacher instructions.
05.09	Mark fabric for assembly according to a pattern or teacher instructions.
05.10	Mark fabric for trims according to a pattern or teacher instructions.
05.11	Match thread with fabric.
05.12	Identify, select, and use content labels according to fabric requirements.
06.0	Demonstrate skill in the construction of simple garments. The student will be able to:

06.01	Identify common ready-to-wear sizes.
06.02	Identify and describe the characteristics of a properly fitted garment.
06.03	Take accurate body measurements, select pattern size, and determine figure type.
06.04	Interpret verbal, written, and visual directions.
06.05	Prepare fabric and adjust patterns by following pattern directions.
06.06	Lay out, pin, cut, and mark fabric according to pattern specifications.
06.07	Demonstrate stay stitching and ease stitching.
06.08	Demonstrate stitching darts and tucks.
06.09	Identify and match garment pieces using markings; stitch according to directions.
06.10	Match plaids, stripes and one-way designs.
06.11	Demonstrate correct pressing techniques according to fabric requirements.
06.12	Demonstrate casing and elastic installation.
06.13	Demonstrate machine hemming according to machine manual instructions.
06.14	Identify different types of sergers and their characteristics.
07.0	Create an original pattern for a garment. The student will be able to:
07.01	Plan and report on a fashion design project using established criteria.
07.02	Using appropriate software, insert body measurements to produce a pattern.
07.03	Draft and produce a paper pattern using personal measurements.
07.04	Create slopers for a bodice, skirt, and pants; construct the slopers using grey goods and create a mood board that includes a title, photographs of the sloper, and the purpose/use of a sloper (include in Professional Portfolio).
07.05	Create a muslin prototype of the pattern.
07.06	Evaluate the prototype for proper fit and adjust as needed.
07.07	Construct a specialty garment according to teacher instructions (the project must include a minimum number of construction skills as designated by the teacher).

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

Florida Family Career and Community Leaders of America (FCCLA) is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Kitchen and Bath Specialization
Career Cluster: Arts, A/V Technology and Communication

CCC	
CIP Number	0450040805
Program Type	College Credit Certificate (CCC)
Program Length	39 credit hours
CTSO	Collegiate DECA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as a kitchen designer, bath designer, kitchen salesperson, bath sales person, drafting/design technician, customer service specialist, job estimator, expeditor, industry representative, CAD technician, or installer/project manager.

This certificate program is part of the Interior Design Technology AS degree program (1450040801).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Completion of studies is the first step in the process of fulfilling requirements needed to sit for the Kitchen and Bath certification. A secondary purpose of the program is to provide supplemental or required training for persons previously or currently employed in the above listed occupations.

The curriculum of the program includes the following: the elements and principles of design; the study of the human environment; programming; the design process and evaluation of design; technical knowledge and skills; selection and specifying of materials, fixtures, and equipment; visual and

oral communication; design history; business principles and practices; lighting; space planning; codes; universal design; and employability. Students are required to create and maintain a portfolio throughout this program.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards:

After successfully completing this program, the student will be able to perform the following:

- 01.0 Identify and apply elements and principles of design to interior spaces.
- 02.0 Describe the interrelationship between humans and their interior environments.
- 03.0 Plan for space utilization and development according to identified functions (programming and diagramming).
- 04.0 Select and arrange furniture, fixtures, fabrics, equipment, and accessories.
- 05.0 Identify the appropriate uses and functions of materials.
- 06.0 Identify, research, and specify interior design materials and resources.
- 07.0 Research and specify appropriate interior lighting options.
- 08.0 Identify interior methods and systems in building construction.
- 09.0 Identify interior building codes, regulations, and legislation pertaining to residential and non-residential spaces.
- 10.0 Communicate design projects through graphic techniques and visual/oral presentation skills.
- 11.0 Demonstrate employability skills and identify job and career opportunities.
- 12.0 Identify professional business organization and development procedures and/or systems.
- 13.0 Recognize, identify, and/or analyze historical, cultural, and societal influences on structures, interiors, and furnishings.
- 14.0 Analyze and apply the concepts of adaptive reuse, renovation, restoration, and/or the historic preservation of existing structures.
- 15.0 Incorporate evaluation, space planning, layout, workflow, and design into a project.
- 16.0 Identify the categories (high, medium, low) involved in the calculation of a budget estimate for an interior design project.
- 17.0 Learn the process of manually and/or electronically preparing a complete set of working construction drawings for a building.
- 18.0 Identify the importance of acoustics to habitable spaces.
- 19.0 Create a Life Safety Plan.
- 20.0 Design safe and universally accessible spaces.
- 21.0 Identify the elements of a basic agreement between the designer and the client; identify services and responsibilities.
- 22.0 Demonstrate knowledge of computer skills.
- 23.0 Identify, research, and design sustainable interiors.
- 24.0 Participate in an internship.

**Florida Department of Education
Student Performance Standards**

Program Title: Kitchen and Bath Specialization
CIP Number: 0450040805
Program Length: 39 credit hours

This certificate program is part of the Interior Design Technology AS degree program (1450040801). At the completion of this program, the student will be able to:

01.0	Identify and apply elements and principles of design to interior spaces. The student will be able to:
01.01	Evaluate aspects of color schemes in relation to interior design.
01.02	Describe the color wheel.
01.03	Explain the psychological effects of color on space and human interaction.
01.04	Demonstrate the primary elements of design (point, line, plane, volume) and the role of these elements in interior design and architecture.
01.05	Describe and demonstrate the function of the visible spectrum and pigmentation as inherent properties of design materials and their impact on color perception.
01.06	Describe and demonstrate knowledge of the three dimensions of color.
01.07	Identify common comprehensive color systems used by designers for the description and specification of color.
01.08	Apply knowledge of the results and effects of color interaction in design.
01.09	Identify and apply the categories of material and surface texture to interior needs and functions; determine how they affect the perception of color in interiors spaces.
01.10	Identify and demonstrate the role of light on perception of surface texture in design projects and how light affects the perception of color in interior spaces.
01.11	Identify, describe, and apply the principles of design and design elements to the function (use of the interior space) and aesthetics of design.
02.0	Describe the interrelationship between humans and their interior environments. The student will be able to:
02.01	Identify personal and group needs that influence the use of each occupied space, including those of persons with special needs.
02.02	Identify, describe, and apply the principles of evidence-based design.
02.03	Demonstrate an understanding of the Americans with Disabilities Act and how it affects the interior environment.
02.04	Demonstrate an understanding of specialized design needs.

02.05	Illustrate the principles of ergonomics and anthropometrics.
02.06	Identify responses to the psychological, physical, and social needs of people using interior spaces (e.g., territoriality, personalization, group interaction).
03.0	Plan for space utilization and development according to identified functions (programming and diagramming). The student will be able to:
03.01	Identify, describe, and demonstrate the established functional and aesthetic goals and objectives that direct the programming process.
03.02	Demonstrate an understanding of diverse client needs.
03.03	Identify, define, and apply known methods of collecting information.
03.04	Create and interpret a design matrix and other schematic processes.
03.05	Define and/or illustrate bubble diagrams and block planning.
03.06	Describe spatial adjacency, utilization, circulation, light, and function.
03.07	Identify and apply the required adjacency and spatial considerations in interior spaces.
03.08	Identify and apply the requirements of good traffic circulation.
03.09	Verify appropriate allocations of space according to programmatic needs.
03.10	Sketch preliminary layouts.
03.11	Identify the differences between the form and usage of public and private spaces.
04.0	Select and arrange furniture, fixtures, fabrics, equipment, and accessories. The student will be able to:
04.01	Analyze the criteria for the selection and arrangement of furnishings for the client.
04.02	Develop a furniture arrangement and traffic plan.
04.03	Select bathroom and kitchen fixtures.
04.04	Select kitchen and bath cabinets for an interior design plan.
04.05	Identify and compare the different fabrics available and recognize characteristics such as durability, texture, comfort, and end use.
04.06	Identify precedents in the use of furnishings.
05.0	Identify the appropriate uses and functions of materials. The student will be able to:

05.01	Identify and analyze flooring materials and determine the advantages and disadvantages of each type.
05.02	Analyze the characteristics of fibers and the construction of various types of floor coverings and interior fabrics.
05.03	Identify various ceiling treatments.
05.04	Identify and categorize types of wall coverings.
05.05	Identify and describe the types and functions of windows.
05.06	Identify and describe the different types of window coverings.
05.07	Demonstrate the ability to calculate the quantity needed for flooring, window treatments, and wall coverings.
05.08	Consider maintenance and/or recycling requirements when specifying materials.
06.0	Identify, research, and specify interior design materials and resources. The student will be able to:
06.01	Identify manufacturers of lighting, architectural treatments, and accessories.
06.02	Identify resources for recyclable materials.
06.03	Demonstrate an understanding of the differences in quality of design materials.
06.04	Identify and describe aspects of interior materials and installation methods that have the potential to impact the health, safety, and welfare of residential and/or commercial clientele.
06.05	Identify and describe the roles manufacturers' representatives, contractors, and other resource specialists play in assisting the designer and client in the appropriate selection, design, specification, and installation of materials and finishes for design projects.
06.06	Identify and describe the roles testing standards, agencies, and ratings have on the designer's selection and the specification of materials and products to protect the health, safety, and welfare of the client and the public.
07.0	Research and specify appropriate interior lighting. The student will be able to:
07.01	Identify lighting requirements.
07.02	Relate lighting options and the selection of lighting fixtures to interior design.
07.03	Identify appropriate lighting fixtures for efficient and effective performance in residential and/or commercial interior design projects.
07.04	Identify and describe human responses to light contrast.
07.05	Identify and describe the effects of contrast and diffusion on interior spaces.
07.06	Describe the impact (positive and negative) of daylight on interiors.

07.07	Describe the various means of controlling daylight impact on interiors.
07.08	Identify and describe lighting needs for clients with special needs.
07.09	Identify and define the characteristics and sources of man-made light.
07.10	Identify and describe the color characteristics of artificial lighting.
07.11	Identify and apply sustainable/green design concerns and other economic issues related to lighting design (e.g., initial costs, maintenance, and replacement).
07.12	Identify, describe, and apply knowledge of both architectural and portable lighting.
07.13	Apply knowledge of appropriate fixture placement and location to interior design projects.
07.14	Identify, describe, and apply the appropriate placement and selection of light switches.
07.15	Identify and describe the codes and regulations that impact lighting design as related to health, safety and welfare requirements.
08.0	Identify interior methods and systems in building construction. The student will be able to:
08.01	Identify methods and techniques of construction.
08.02	Read basic plans.
08.03	Describe the advantages of applying green design considerations to construction decisions.
08.04	Identify the different materials and assemblies employed in the construction of partitions, walls, and ceilings for residential and commercial application.
08.05	Identify the types of millwork, woods, veneers and finishes available.
08.06	Identify and describe the appropriate cuts of lumber and timber for construction or millwork application.
08.07	Identify the appropriate installation systems for wall paneling and acoustical ceilings.
09.0	Identify interior building codes, regulations, and legislation pertaining to residential and non-residential spaces. The student will be able to:
09.01	Identify residential and non-residential local, state, and national building codes.
09.02	Identify legislation regarding barrier-free environment.
09.03	Identify regulations concerning health and safety codes.
09.04	Cite labeling techniques identifying products that meet flammability standards required by fire code.

09.05	Identify the different requirements based on type of occupancy and type of construction.
09.06	Describe the material ratings and resistance of materials to fire.
09.07	Identify ADA requirements relative to the design of interior spaces.
09.08	Identify residential building codes.
10.0	Communicate design concepts through visual and oral presentation skills. The student will be able to:
10.01	Use sketching techniques, drafting equipment, and/or computer programs to communicate interior design projects.
10.02	Demonstrate the use and care of equipment.
10.03	Demonstrate neatness and accuracy.
10.04	Execute line work by hand and/or by CAD.
10.05	Illustrate graphic notations and scale in a hand-drawing or CAD drawing.
10.06	Demonstrate overlapping techniques.
10.07	Explain detail drawings.
10.08	Illustrate shade and shadow from natural light sources by hand-drawing and/or CAD drawing.
10.09	Apply methods and techniques for two-dimensional and three-dimensional illustrations.
10.10	Apply the methods and techniques of one-point perspective drawing and two-point perspective drawing.
10.11	Create, analyze, and evaluate oral and graphic techniques for oral and visual presentations.
10.12	Demonstrate layout techniques for presentations by applying the principles of design.
10.13	Use lettering techniques and font selection for presentations.
10.14	Use graphic design and presentation skills to compile and review a portfolio (printed and/or digital).
11.0	Demonstrate employability skills and identify job and career opportunities. The student will be able to:
11.01	Conduct a job search.
11.02	Secure information concerning a job.
11.03	Identify documents that may be required to apply for a job.

11.04	Demonstrate job interview techniques.
11.05	Identify or demonstrate appropriate responses to criticism from an employer, supervisor, coworker, or customer.
11.06	Identify and/or demonstrate acceptable work habits.
11.07	Demonstrate acceptable employee health habits.
11.08	Demonstrate customer relations skills.
11.09	Evaluate sources of employment information.
11.10	Identify post-A.S. degree options (e.g., 4-year degrees, licensing/NCIDQ, certifications, LEED, and CAPS).
11.11	Identify job and career opportunities in the interior design industry.
12.0	Identify professional business organization and development procedures and/or systems. The student will be able to:
12.01	Identify interior design industry-related professional organizations.
12.02	Analyze the business practices and procedures necessary for the operation of an interior design business.
12.03	Recognize the legal and business terms used in the field of interior design.
12.04	Describe the legal considerations and forms necessary to the practice of interior design.
12.05	Describe the procedures used in current interior design work experience.
12.06	Identify considerations for selecting the location of a business.
12.07	Describe the organizational structure of an interior design firm.
12.08	Identify the principles of record keeping (e.g., proposals, invoices, billable hours, and markups).
12.09	Identify types of contracts utilized by an interior design firm.
12.10	Cite the licensing requirements needed to operate a business.
12.11	Identify the methods or techniques of supply procurement.
12.12	Demonstrate an understanding of the code of ethics for professional designers as prepared by industry-related professional organizations.
12.13	Demonstrate an understanding of licensing requirements.
12.14	Demonstrate an understanding of the uses of social media as a marketing tool for the interior design field.

13.0	Recognize, identify, and/or analyze historical, cultural, and societal influences on structures, interiors, and furnishings. The student will be able to:
13.01	Identify and analyze the characteristics of historic design in relation to the history of interiors.
13.02	Identify, recognize, compare, and describe different movements and historical periods in the evolution of architecture and interior design (e.g., Roman and Greek influences, styles of Middle Ages, the effects of the Italian Renaissance and the French Renaissance, Spanish and Islamic influences, English/British influences).
13.03	Analyze the work of contemporary architects, interior designers, and furniture designers.
13.04	Apply knowledge and appropriate synthesis of design forms with furnishings, finishes, and materials in interior design projects.
13.05	Describe how architecture, furniture, and decorative arts relate to interior design throughout history.
14.0	Analyze and apply the concepts of adaptive reuse, renovation, restoration, and/or the historic preservation of existing structures. The student will be able to:
14.01	Describe the significant issues and fundamentals of adaptive reuse, renovation, restoration, and historic preservation.
14.02	Compare adaptive reuse, renovation, restoration, and historic preservation options.
14.03	Identify sources for researching historical period data.
15.0	Incorporate evaluation, space planning, layout, workflow, and design into a project. The student will be able to:
15.01	Develop a plan for the implementation of design concepts into a design project.
15.02	Apply design methods and techniques to a project in residential interior design.
15.03	Apply design methods and techniques to a project in nonresidential interior design.
15.04	Understand and apply programming sequences in a design product.
15.05	Demonstrate an understanding of design development stages by completing a design project.
15.06	Identify the purpose and content of a post-occupancy evaluation.
15.07	Define a schedule for installations.
15.08	Research catalog price lists and understand the importance of preparing order forms.
15.09	Prepare furniture, fixtures, and equipment specifications for a project.
15.10	Describe finish schedules/plans.
16.0	Identify the categories (high, medium, low) involved in the calculation of a budget estimate for an interior design project. The student will be able to:

16.01	Describe the categories of materials, furnishings, equipment, overhead, and services to be provided.
16.02	Identify different methods available to estimate the cost of a project.
16.03	Develop and prepare a budget for a project.
17.0	Learn the process of manually and/or electronically preparing a complete set of working construction drawings for a building. The student will be able to:
17.01	Organize a construction package according to content categories.
17.02	Coordinate documents from different parties involved in the process of compiling construction drawings.
17.03	Utilize standard graphics and symbols.
17.04	Specify millwork and special features.
18.0	Identify the importance of acoustics on habitable spaces. The student will be able to:
18.01	Identify, describe, and/or apply the basic principles, concepts, and qualities of sound as they affect human perception.
18.02	Demonstrate an understanding of sound transmission and levels.
18.03	Identify and/or apply the fundamentals of sound absorption to evaluate the means that might be employed to control the acoustic quality of a space.
18.04	Demonstrate an understanding of and/or apply the knowledge of spatial organization and surface treatments for walls, ceilings, and finishes to achieve desired results in sound balance and comfort in an interior.
19.0	Create a Life Safety Plan. The student will be able to:
19.01	Calculate the occupancy load of a space and the required number of exits.
19.02	Describe the appropriate exit sizes, travel distances, and location of exits within a room or corridor.
19.03	Choose appropriate door types for access and egress.
19.04	Locate stairways to meet fire-safety requirements.
19.05	Identify the differences between residential and commercial access and egress requirements.
20.0	Design safe and universally accessible spaces. The student will be able to:
20.01	Identify the use of ramps and automated systems designed to accommodate persons with disabilities.
20.02	Demonstrate an understanding of the anthropometrics and ergonomics of a disabled person to aid in the selection of fixtures, floor surfaces, and bathroom layouts.

20.03	Implement the principles of Uniform Standards for Universal Design.
20.04	Describe and implement Aging in Place methodology.
21.0	Identify the elements of a basic agreement between the designer and the client; identify services and responsibilities. The student will be able to:
21.01	Describe the scope of basic interior design services.
21.02	Outline the mutual responsibilities of the owner and the designer.
22.0	Demonstrate knowledge of computer skills. The student will be able to:
22.01	Demonstrate knowledge of CAD and/or other comparable programs utilized in the industry.
22.02	Demonstrate knowledge of 2D and 3D computer drawing and graphics software.
22.03	Identify and research interior design sources on the Internet.
22.04	Demonstrate proficiency in printing and/or drawing to scale.
22.05	Input, manipulate, and export computer images using a variety of software programs and/or Internet resources.
22.06	Demonstrate design solutions and support information using various software programs.
23.0	Identify, research, and design sustainable interiors. The student will be able to:
23.01	Recognize, define, and understand the concepts and terminology of green/sustainable design and energy and water conservation.
23.02	Describe the differences between sustainable and green design.
23.03	Describe and apply the practice of Environmentally Responsible Interior Design (ERID).
23.04	Demonstrate the ability to identify, research, and use sustainable materials in interior design.
23.05	Identify the governing organizations associated with sustainable design.
23.06	Evaluate the cost of green/sustainable design; consider initial and long-term costs.
23.07	Recognize the concepts associated with sustainable design.
23.08	Define the terminology associated with sustainable design.
23.09	Identify appropriate sustainable design resources.
23.10	Identify the costs and requirements of sustainable design.

23.11	Identify the principles of sustainable lighting, acoustics, thermal comfort, and indoor air quality to enhance the health, safety, welfare, and performance of occupants.
23.12	Demonstrate an understanding of the concepts, principles, and theories of sustainability as they pertain to building methods, materials, systems, and occupants.
23.13	Identify sustainable interior construction and building systems.
23.14	Demonstrate an understanding of daylight, energy efficient luminaries, and alternative energy sources.
24.0	Participate in an internship. The student will be able to:
24.01	Establish achievable goals related to an internship.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

Collegiate DECA - Delta Epsilon Chi is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Home Staging Specialist
Career Cluster: Arts, A/V Technology and Communication

CCC	
CIP Number	0450040807
Program Type	College Credit Certificate (CCC)
Program Length	12 credit hours
CTSO	Collegiate DECA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students to work as home staging specialists.

This certificate program is part of the Interior Design Technology AS degree program (1450040801).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Identify and apply elements and principles of design to interior spaces.
- 02.0 Select and arrange furniture, fixtures, fabrics, equipment, and accessories.
- 03.0 Identify, research, and specify interior design materials and resources.
- 04.0 Communicate design projects through graphic techniques and visual/oral presentation skills.
- 05.0 Demonstrate employability skills and identify job and career opportunities.
- 06.0 Analyze and apply the concepts of adaptive reuse, renovation, restoration, and/or the historic preservation of existing structures.
- 07.0 Identify the elements of a basic agreement between the designer and the client; identify services and responsibilities.
- 08.0 Demonstrate knowledge of computer skills.
- 09.0 Identify, research, and design sustainable interiors.

**Florida Department of Education
Student Performance Standards**

Program Title: Home Staging Specialist
CIP Number: 0450040807
Program Length: 12 credit hours

This certificate program is part of the Interior Design Technology AS degree program (1450040801). At the completion of this program, the student will be able to:

01.0	Identify and apply elements and principles of design to interior spaces. The student will be able to:
01.01	Evaluate aspects of color schemes in relation to interior design.
01.02	Describe the color wheel.
01.03	Explain the psychological effects of color on space and human interaction.
01.04	Demonstrate the primary elements of design (point, line, plane, volume) and the role of these elements in interior design and architecture.
01.05	Describe and demonstrate the function of the visible spectrum and pigmentation as inherent properties of design materials and their impact on color perception.
01.06	Describe and demonstrate knowledge of the three dimensions of color.
01.07	Identify common comprehensive color systems used by designers for the description and specification of color.
01.08	Apply knowledge of the results and effects of color interaction in design.
01.09	Identify and apply the categories of material and surface texture to interior needs and functions; determine how they affect the perception of color in interiors spaces.
01.10	Identify and demonstrate the role of light on perception of surface texture in design projects and how light affects the perception of color in interior spaces.
01.11	Identify, describe, and apply the principles of design and design elements to the function (use of the interior space) and aesthetics of design.
02.0	Select and arrange furniture, fixtures, fabrics, equipment, and accessories. The student will be able to:
02.01	Analyze the criteria for the selection and arrangement of furnishings for the client.
02.02	Develop a furniture arrangement and traffic plan.
02.03	Select bathroom and kitchen fixtures.
02.04	Select kitchen and bath cabinets for an interior design plan.

03.0	Identify the appropriate uses and functions of materials. The student will be able to:
03.01	Identify and analyze flooring materials and determine the advantages and disadvantages of each type.
03.02	Analyze the characteristics of fibers and the construction of various types of floor coverings and interior fabrics.
03.03	Identify various ceiling treatments.
03.04	Identify and categorize types of wall coverings.
03.05	Identify and describe the types and functions of windows.
03.06	Identify and describe the different types of window coverings.
03.07	Demonstrate the ability to calculate the quantity needed for flooring, window treatments, and wall coverings.
03.08	Consider maintenance and/or recycling requirements when specifying materials.
04.0	Communicate design concepts through visual and oral presentation skills. The student will be able to:
04.01	Demonstrate neatness and accuracy.
04.02	Execute line work by hand and/or by CAD.
04.03	Illustrate graphic notations and scale in a hand-drawing or CAD drawing.
04.04	Demonstrate overlapping techniques.
04.05	Illustrate shade and shadow from natural light sources by hand-drawing and/or CAD drawing.
05.0	Demonstrate employability skills and identify job and career opportunities. The student will be able to:
05.01	Conduct a job search.
05.02	Secure information concerning a job.
05.03	Identify documents that may be required to apply for a job.
05.04	Demonstrate job interview techniques.
05.05	Identify or demonstrate appropriate responses to criticism from an employer, supervisor, coworker, or customer.
05.06	Identify and/or demonstrate acceptable work habits.
05.07	Demonstrate acceptable employee health habits.

05.08	Demonstrate customer relations skills.
05.09	Evaluate sources of employment information.
05.10	Identify post-A.S. degree options (e.g., 4-year degrees, licensing/NCIDQ, certifications, LEED, CAPS).
05.11	Identify job and career opportunities in the interior design industry.
06.0	Analyze and apply the concepts of adaptive reuse, renovation, restoration, and/or the historic preservation of existing structures. The student will be able to:
06.01	Describe the significant issues and fundamentals of adaptive reuse, renovation, restoration, and historic preservation.
06.02	Compare adaptive reuse, renovation, restoration, and historic preservation options.
06.03	Identify sources for researching historical period data.
07.0	Identify the elements of a basic agreement between the designer and the client; identify services and responsibilities. The student will be able to:
07.01	Describe the scope of basic interior design services.
07.02	Outline the mutual responsibilities of the owner and the designer.
08.0	Demonstrate knowledge of computer skills. The student will be able to:
08.01	Identify and research interior design sources on the Internet.
08.02	Input, manipulate, and export computer images using a variety of software programs and/or Internet resources.
09.0	Identify, research, and design sustainable interiors. The student will be able to:
09.01	Recognize, define, and understand the concepts and terminology of green/sustainable design and energy and water conservation.
09.02	Describe the differences between sustainable and green design.
09.03	Describe and apply the practice of Environmentally Responsible Interior Design (ERID).
09.04	Demonstrate the ability to identify, research, and use sustainable materials in interior design.
09.05	Identify the governing organizations associated with sustainable design.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

Collegiate DECA - Delta Epsilon Chi is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Media/Multimedia Authoring
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0609070209
Program Type	College Credit Certificate (CCC)
Program Length	12 credits hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program is designed to prepare students for initial employment as Digital Media/Multimedia Production Technicians or Digital Media/Multimedia Developers, or to provide supplemental training for those already employed in the field. This certificate provides students with the computer, production, and digital media skills needed to create digital media/multimedia projects.

This certificate program is part of the Digital Media/Multimedia Technology AS degree program (1611080103).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Create, alter and/or adjust presentations using a variety of digital media/multimedia technologies.
- 02.0 Use computer applications for digital media/multimedia projects.
- 03.0 Produce digital media/multimedia projects.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Media/Multimedia Authoring
CIP Number: 0609070209
Program Length: 12 credit hours

This certificate program is part of the Digital Media/Multimedia Technology AS degree program (1611080103). At the completion of this program, the student will be able to:

01.0 Create, alter and/or adjust presentations utilizing a variety of digital media/multimedia technologies. The student will be able to:

01.01 Adapt learned skills and generate new approaches in order to solve unique production problems.

02.0 Use computer applications for digital media/multimedia projects. The student will be able to:

02.01 Demonstrate a basic proficiency with digital media/multimedia software packages.

02.02 Design and produce digital media/multimedia content.

02.03 Test, edit and de-bug digital media/multimedia content.

03.0 Produce digital media/multimedia projects. The student will be able to:

03.01 Create the written form of a story appropriate to the digital media/multimedia projects.

03.02 Create and prepare a storyboard appropriate to the digital media/multimedia projects.

03.03 Design navigational structure for interactive environments.

03.04 Organize resources and personnel to implement production.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Media/Multimedia Video Production
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0609070210
Program Type	College Credit Certificate (CCC)
Program Length	12 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as a videographer, video editor, or to provide supplemental training for persons previously or currently employed in these occupations.

This certificate program is part of the Digital Media/Multimedia Technology AS degree program (1611080103).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Design and generate video and/or animations in multimedia projects.
- 02.0 Produce digital media/multimedia projects.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Media/Multimedia Video Production
CIP Number: 0609070210
Program Length: 12 credit hours

This certificate program is part of the Digital Media/Multimedia Technology AS degree program (1611080103). At the completion of this program, the student will be able to:

01.0	Design and generate video and/or animations in multimedia project(s). The student will be able to:
01.01	Capture, manipulate and apply a video and/or animation image in digital media/multimedia projects.
01.02	Differentiate and optimize video and/or animation formats.
01.03	Apply elements of design, principles of composition and qualities of light to video and/or animation in digital media/multimedia projects.
01.04	Integrate the use of video special effects into digital media/multimedia projects.
01.05	Evaluate moving image quality using appropriate application standards.
02.0	Produce digital media/multimedia projects. The student will be able to:
02.01	Create the written form of a story/script appropriate to the media selected.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Media/Multimedia Instructional Technology
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0609070211
Program Type	College Credit Certificate (CCC)
Program Length	15 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as an instructional developer, instructional media integrator, instructional media specialist, or to provide supplemental training for persons previously or currently employed in these occupations.

The content should include, but not be limited to, the design and production of digital media/multimedia projects using computer applications, and the demonstration of appropriate communication skills.

This certificate program is part of the Digital Media/Multimedia Technology AS degree program (1611080103).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Create, alter and/or adjust presentations utilizing a variety of digital media/multimedia technologies.
- 02.0 Use computer applications for digital media/multimedia projects.
- 03.0 Produce digital media/multimedia projects.
- 04.0 Demonstrate appropriate communication skills.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Media/Multimedia Instructional Technology
CIP Number: 0609070211
Program Length: 15 credit hours

This certificate program is part of the Digital Media/Multimedia Technology AS degree program (1611080103). At the completion of this program, the student will be able to:

01.0 Create, alter and/or adjust presentations utilizing a variety of digital media/multimedia technologies. The student will be able to:

01.01 Analyze the strengths and weaknesses of presentational media.

02.0 Use computer applications for digital media/multimedia projects. The student will be able to:

02.01 Demonstrate a basic proficiency with digital media/multimedia software packages.

02.02 Design and produce digital media/multimedia content.

03.0 Produce digital media/multimedia projects. The student will be able to:

03.01 Assess the needs of the end user or client.

03.02 Analyze available resources.

04.0 Demonstrate appropriate communication skills. The student will be able to:

04.01 Read and follow written and oral instructions.

04.02 Answer and ask questions coherently and concisely.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Media/Multimedia Presentation
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0609070219
Program Type	College Credit Certificate (CCC)
Program Length	17 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as an audio/visual technician, audio technician, lighting technician, or to provide supplemental training for persons previously or currently employed in these occupations.

This certificate program is part of the Digital Media/Multimedia Technology AS degree program (1611080103).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content should include, but not be limited to, the learning of management skills permitting the graduate to oversee the operation of institutional and industrial multiple media operations. Instruction includes: use of multimedia hardware and software, production analysis, the design and production of digital media/multimedia projects, digital media/multimedia management and the application of production skills to solving the problems relating to the integration of multiple media. Also included are skills relating to professionalism, employability, communication, and management.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Use industry standard digital media/multimedia hardware and software.
- 02.0 Create, alter and/or adjust presentations utilizing a variety of digital media/multimedia technologies.
- 03.0 Design and generate still imagery/graphics.
- 04.0 Design and execute audio technology for a digital media/multimedia project(s).
- 05.0 Use computer applications for digital media/multimedia projects.
- 06.0 Produce digital media/multimedia projects.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Media/Multimedia Presentation
CIP Number: 0609070219
Program Length: 17 credit hours

This certificate program is part of the Digital Media/Multimedia Technology AS degree program (1611080103). At the completion of this program, the student will be able to:

01.0 Use industry standard digital media/multimedia hardware and software. The student will be able to:

01.01 Demonstrate the proper care and handling of equipment used in digital media/multimedia.

01.02 Perform pre- and post-production routines with digital media/multimedia hardware and software.

01.03 Familiarize with industry standard equipment and software.

02.0 Create, alter and/or adjust presentations utilizing a variety of digital media/multimedia technologies. The student will be able to:

02.01 Demonstrate the ability to locate appropriate production resources.

02.02 Utilize production techniques to create industry standard outcomes.

02.03 Adapt learned skills and generate new approaches in order to solve unique production problems.

03.0 Design and generate still imagery/graphics. The student will be able to:

03.01 Understand the properties of light and how to utilize them in still images/graphics.

04.0 Utilize/create/produce audio technology for digital media/multimedia project(s). The student will be able to:

04.01 Capture, manipulate and apply audio and sound in digital media/multimedia projects.

04.02 Differentiate and optimize formats for audio.

04.03 Evaluate production needs for microphones.

04.04 Demonstrate proficiency with a multi-channel audio mixing.

04.05 Utilize industry standards for multi-track recording.

05.0 Use computer applications for digital media/multimedia projects. The student will be able to:

05.01 Demonstrate a basic proficiency with digital media/multimedia software packages.

05.02	Present digital media/multimedia content.
06.0	Produce digital media/multimedia projects. The student will be able to:
06.01	Assess the needs of the end user or client.
06.02	Analyze available resources.
06.03	Create the written form of a story/script appropriate to the digital media/multimedia projects.
06.04	Create and prepare a storyboard appropriate to the digital media/multimedia projects.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: **Communication Leadership**
Career Cluster: **Arts A/V Technology and Communication**

CCC	
CIP Number	0609090200
Program Type	College Credit Certificate (CCC)
Program Length	18 credits hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This certificate program is part of the New Media Communication AS degree program (1609090200).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content of this program is designed to prepare students for initial employment in the field of new media communication or to provide supplemental training for those already employed in the field. This certificate provides students with the skills needed to create effective new media content.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate effective professional, interpersonal, and intercultural communication skills.
- 02.0 Demonstrate the fundamental skills of the writing process for varied mass and new media communication platforms.
- 03.0 Demonstrate appropriate technical, analytical, and evaluative skills for new media content creation, delivery, and social impact.

**Florida Department of Education
Student Performance Standards**

Program Title: Communication Leadership
CIP Number: 0609090200
Program Length: 18 credit hours

This certificate program is part of the New Media Communication AS degree program (1609090200). At the completion of this program, the student will be able to:

01.0	Demonstrate effective professional, interpersonal, and intercultural communication skills. The student will be able to:
01.01	Demonstrate an understanding of varied communication theories.
01.02	Demonstrate effective oral communication and presentation skills.
01.03	Demonstrate the skills required to interactively and critically participate in new media environments and platforms.
01.04	Prepare and verbally deliver factual material in a direct and logical manner.
01.05	Demonstrate scholarly research skills.
01.06	Demonstrate the effective use of visual aids, technical equipment, and projected images appropriate for new media.
01.07	Demonstrate professional interviewing skills and general interpersonal communications.
01.08	Produce a body of work that demonstrates proficiency in language, spelling, mechanics, and grammar.
01.09	Increase listening skills and the retention of information.
01.10	Demonstrate understanding of effective methods of organizational change and leadership.
02.0	Demonstrate the fundamental skills of the writing process for varied mass and new media communication platforms. The student will be able to:
02.01	Understand the nature of good writing and explain how writing for mass and/or new media communication differs from other formal writing forms.
02.02	Demonstrate mastery of English grammar, syntax, and punctuation.
02.03	Detail the elements of style that characterize the AP stylebook.
02.04	Compose written media using established web-based technologies and software applications.
02.05	Demonstrate understanding of visual media/images and the impact of these images on composition.

02.06	Utilize spreadsheet software to organize and analyze data, perform calculations, and draft executive summaries for publication.
02.07	Prepare well-written professional communications/articles and reports using publishing applications and software for new media.
03.0	Demonstrate appropriate technical, analytical, and evaluative skills for new media content creation, delivery, and social impact. The student will be able to:
03.01	Demonstrate understanding of media content at a literal level (e.g., capture others' ideas published on varied media platforms).
03.02	Demonstrate the ability to utilize new media, digital publishing, and digital imaging software.
03.03	Demonstrate the ability to interpret and construct dynamic models (simulation) and navigate information across various modalities.
03.04	Demonstrate understanding of the construction of media as a subjective and social process.
03.05	Demonstrate understanding of co-creation and sharing relative to new media content creation.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered. The activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, F.A.C.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Media/Multimedia Production
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0610010507
Program Type	College Credit Certificate (CCC)
Program Length	15 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as a digital media/multimedia production technician, digital media/multimedia developer, or to provide supplemental training for persons previously or currently employed in these occupations.

The content should include, but not be limited to, the use of multimedia hardware and software and the design and production of digital media/multimedia projects, including manipulation of video and/or animations and audio.

This certificate program is part of the Digital Media/Multimedia Technology AS degree program (1611080103).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Use industry standard digital media/multimedia hardware and software.
- 02.0 Create, alter and/or adjust presentations utilizing a variety of digital media/multimedia technologies.
- 03.0 Design and generate video and/or animations in a multimedia project(s).
- 04.0 Utilize/create/produce audio technology for digital media/multimedia project(s).
- 05.0 Use computer applications for digital media/multimedia projects.
- 06.0 Produce digital media/multimedia projects.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Media/Multimedia Production
CIP Number: 0610010507
Program Length: 15 credit hours

This certificate program is part of the Digital Media/Multimedia Technology AS degree program (1611080103). At the completion of this program, the student will be able to:

01.0	Use industry standard digital media/multimedia hardware and software. The student will be able to:
01.01	Familiarize with industry standard equipment and software.
02.0	Create, alter and/or adjust presentations utilizing a variety of digital media/multimedia technologies. The student will be able to:
02.01	Analyze the strengths and weaknesses of presentational media.
02.02	Demonstrate the ability to locate appropriate production resources.
02.03	Utilize production techniques to create industry standard outcomes.
02.04	Adapt learned skills and generate new approaches in order to solve unique production problems.
03.0	Design and generate video and/or animations in multimedia project(s). The student will be able to:
03.01	Capture, manipulate and apply a video and/or animation image in digital media/multimedia projects.
03.02	Apply elements of design, principles of composition and qualities of light to video and/or animation in digital media/multimedia projects.
04.0	Utilize/create/produce audio technology for digital media/multimedia project(s). The student will be able to:
04.01	Capture, manipulate and apply audio and sound in digital media/multimedia projects.
05.0	Use computer applications for digital media/multimedia projects. The student will be able to:
05.01	Demonstrate a basic proficiency with digital media/multimedia software packages.
05.02	Design and produce digital media/multimedia content.
05.03	Test, edit and de-bug digital media/multimedia content.
06.0	Produce digital media/multimedia projects. The student will be able to:

06.01	Assess the needs of the end user or client.
06.02	Analyze available resources.
06.03	Create the written form of a story/script appropriate to the digital media/multimedia projects.
06.04	Create and prepare a storyboard(s) appropriate to the digital media/multimedia projects.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: **Television Studio Production**
Career Cluster: **Arts A/V Technology and Communication**

CCC	
CIP Number	0610020200
Program Type	College Credit Certificate (CCC)
Program Length	12 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to provide students with the basic skills required to produce broadcast quality television in the studio and professional video on location. Students learn studio and location lighting, multi-camera directing, audio recording and mixing, and digital video shooting and editing skills.

This certificate program is part of the Digital Television and Media Production AS degree program (1609070213).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate the ability to collaborate with others.
- 02.0 Demonstrate safe and efficient work practices.
- 03.0 Create appropriate lighting for location and/or set productions.
- 04.0 Operate studio and field video cameras.
- 05.0 Record, mix and edit audio resources.
- 06.0 Operate control room equipment.
- 07.0 Organize and edit video resources.

**Florida Department of Education
Student Performance Standards**

Program Title: **Television Studio Production**
CIP Number: **0610020200**
Program Length: **12 credit hours**

This certificate program is part of the Digital Television and Media Production AS degree program (1609070213). At the completion of this program, the student will be able to:

01.0 Demonstrate the ability to collaborate with others. The student will be able to:

01.01 Demonstrate ability to work as part of a team.

02.0 Demonstrate safe and efficient work practices. The student will be able to:

02.01 Follow industry safety rules, regulations and policies.

02.02 Demonstrate awareness of appropriate ergonomics.

02.03 Demonstrate the proper care and use of equipment.

03.0 Create appropriate lighting for location and/or set productions. The student will be able to:

03.01 Use lighting equipment according to industry safety standards.

03.02 Use lighting for effect to control mood and impact in production settings.

04.0 Operate studio and field video cameras. The student will be able to:

04.01 Use current industry standard video production equipment.

04.02 Operate a camera in studio and location (field) production environments.

04.03 Demonstrate appropriate shot sequences, transitions, and post-production (editing) effects.

04.04 Control camera movement to obtain the required effects.

04.05 Control lens, focal length, aperture and exposure to obtain the required effects.

04.06 Perform appropriate pre-production checks of equipment function.

04.07 Define the various recording formats and media.

05.0 Record, mix and edit audio resources. The student will be able to:

05.01	Set up audio recording equipment.
05.02	Perform appropriate pre-production checks of production equipment.
06.0	Operate control room equipment. The student will be able to:
06.01	Define control room functions in a production.
06.02	Operate the audio console (mixer) in a production.
06.03	Operate a production switcher.
07.0	Organize and edit video resources. The student will be able to:
07.01	Log and organize video resources.
07.02	Digitize video resources into post-production equipment and workflow.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

Florida SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Video Fundamentals
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0610020205
Program Type	College Credit Certificate (CCC)
Program Length	12 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to provide students with an introduction to video production; students will gain the knowledge and skills necessary for video production to include, but not be limited to, videography and video editing for the creation of video-based projects.

This certificate program is part of the Digital Television and Media Production AS degree program (1609070213).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate the ability to collaborate with others.
- 02.0 Demonstrate safe and efficient work practices.
- 03.0 Create appropriate lighting for location and/or set productions.
- 04.0 Operate studio and field video cameras.
- 05.0 Record, mix and edit audio resources.
- 06.0 Organize and edit video resources.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Video Fundamentals
CIP Number: 0610020205
Program Length: 12 credit hours

This certificate program is part of the Digital Television and Media Production AS degree program (1609070213). At the completion of this program, the student will be able to:

01.0 Demonstrate the ability to collaborate with others. The student will be able to:

01.01 Demonstrate the ability to work as part of a team.

02.0 Demonstrate safe and efficient work practices. The student will be able to:

02.01 Follow industry safety rules, regulations and policies.

02.02 Demonstrate awareness of appropriate ergonomics.

02.03 Demonstrate proper care and use of equipment.

03.0 Create appropriate lighting for location and/or set productions. The student will be able to:

03.01 Use lighting equipment according to industry safety standards.

03.02 Define light quality in terms of intensity, color, direction and characteristics.

03.03 Light a location set with ambient/available and supplemental lighting.

04.0 Operate studio and field video cameras. The student will be able to:

04.01 Use current industry standard video production equipment.

04.02 Operate a camera in studio and location (field) production environments.

04.03 Plan a shot to obtain the required action/footage.

04.04 Demonstrate appropriate shot sequences, transitions and post-production (edit) effects.

04.05 Control camera movement to obtain the required effects.

04.06 Control lens, focal length, aperture and exposure to obtain the required effects.

04.07 Perform appropriate pre-production checks of equipment function.

04.08	Define the various recording formats and media.
05.0	Record, mix and edit audio resources. The student will be able to:
05.01	Identify and select microphones for production needs.
05.02	Set up audio recording equipment.
05.03	Perform appropriate pre-production checks of production equipment.
06.0	Organize and edit video resources. The student will be able to:
06.01	Log and organize video resources.
06.02	Operate editing hardware and software.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Broadcast Production
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0610020216
Program Type	College Credit Certificate (CCC)
Program Length	24 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment as broadcast production technicians or to provide supplemental training for persons previously or currently employed in these occupations.

This certificate program is part of the Digital Television and Media Production AS degree program (1609070213).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

The content includes, but is not limited to, television, broadcast, video, design and Internet media training. This program focuses on broad transferable skills and stresses understanding and demonstration of the following elements of the television video and Internet/webcast industries: working as part of a team, safe and efficient work practices, use of lighting equipment, operation of video camera, set up and use of audio recording equipment, operation of control room equipment, and organization and editing of video resources.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate the ability to collaborate with others.
- 02.0 Demonstrate safe and efficient work practices.
- 03.0 Generate a production schedule.
- 04.0 Plan a production set.
- 05.0 Create appropriate lighting for location and/or set productions.
- 06.0 Operate studio and field video cameras.
- 07.0 Record, mix and edit audio resources.
- 08.0 Operate control room equipment.
- 09.0 Organize and edit video resources.

**Florida Department of Education
Student Performance Standards**

Program Title: Broadcast Production
CIP Number: 0610020216
Program Length: 24 credit hours

This certificate program is part of the Digital Television and Media Production AS degree program (1609070213). At the completion of this program, the student will be able to:

01.0 Demonstrate the ability to collaborate with others. The student will be able to:

01.01 Demonstrate the ability to work as part of a team.

02.0 Demonstrate safe and efficient work practices. The student will be able to:

02.01 Follow industry safety rules, regulations and policies.

02.02 Demonstrate awareness of appropriate ergonomics.

02.03 Demonstrate the proper care and use of equipment.

03.0 Generate a production schedule. The student will be able to:

03.01 Define the segment or program type.

04.0 Plan a production set. The student will be able to:

04.01 Define the set requirements for a specific program type.

05.0 Create appropriate lighting for location and/or set productions. The student will be able to:

05.01 Determine appropriate lighting needs for production settings.

05.02 Identify locations and studio lighting types, methods of use and application.

05.03 Use lighting equipment according to industry safety standards.

05.04 Define light quality in terms of intensity, color, direction and characteristics.

05.05 Light a location set with ambient/available and supplemental lighting.

05.06 Use lighting for effect to control mood and impact in production settings.

05.07 Use studio lighting master control equipment.

06.0	Operate studio and field video cameras. The student will be able to:
06.01	Use current industry standard video production equipment.
06.02	Operate a camera in studio and location (field) production environments.
06.03	Plan a shot to obtain required action/footage.
06.04	Control camera movement to obtain the required effects.
06.05	Control lens, focal length, aperture and exposure to obtain the required effects.
06.06	Set up the camera and recording equipment sequence.
06.07	Perform appropriate pre-production checks of equipment function.
06.08	Define the various recording formats and media.
07.0	Record, mix and edit audio resources. The student will be able to:
07.01	Identify and select microphones for production needs.
07.02	Determine optimal microphone placement.
07.03	Set up audio recording equipment.
07.04	Establish appropriate recording conditions.
07.05	Perform appropriate pre-production checks of production equipment.
07.06	Perform sound edits and enhancements.
07.07	Record location sound.
07.08	Record studio live sound.
08.0	Operate control room equipment. The student will be able to:
08.01	Define control room functions in a production.
08.02	Use the audio console (mixer) in a production.
08.03	Operate visual control equipment.
08.04	Operate a production switcher.

08.05	Operate the routing switcher according to production requirements.
09.0	Organize and edit video resources. The student will be able to:
09.01	Log and organize video resources.
09.02	Operate editing hardware and software.
09.03	Digitize video resources into post-production equipment and workflow.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

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Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Audio Electronics Specialist
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0610020301
Program Type	College Credit Certificate (CCC)
Program Length	24 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment in music production occupations or to provide supplemental professional training for the persons previously or currently employed in the field. The content includes, but is not limited to, instruction that prepares individuals for positions such as audio and video equipment technicians, audio assistants, audio technicians, sound designers, sound system designers and sound engineering technicians and related workers.

This certificate program is part of the Music and Sound Production Technology AS degree program (1650091300).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and the relevant technical knowledge and skills needed to prepare for further education and careers in the Arts A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate set-up and configuration of a computer for audio applications.
- 02.0 Understand the operation of basic reproduction, reinforcement and recording audio equipment.
- 03.0 Demonstrate understanding of the requirements for set up and operation of a sound reinforcement system.
- 04.0 Perform transactions with music industry suppliers.
- 05.0 Demonstrate employability skills.

**Florida Department of Education
Student Performance Standards**

Program Title: Audio Electronics Specialist
CIP Number: 0610020301
Program Length: 24 credit hours

This certificate program is part of the Music and Sound Production Technology AS degree program (1650091300). At the completion of this program, the student will be able to:

01.0 Demonstrate set-up and configuration of a computer for audio applications. The student will be able to:

01.01 Install and configure software related to audio programs.

01.02 Demonstrate basic knowledge of computer system requirements.

01.03 Install the basic peripheral devices related to audio programs.

02.0 Understand the operation of basic reproduction, reinforcement and recording audio equipment. The student will be able to:

02.01 Assess the audio technology needs of a music production (pre-production).

02.02 Appraise the musical needs of clients (e.g., personnel, hardware, software, etc.).

02.03 Evaluate available audio resources.

02.04 Select and configure appropriate hardware and software.

02.05 Develop a production plan to meet client needs.

02.06 Evaluate the final project for quality and appropriateness.

02.07 Formulate strategies for producing a multi-track recording.

02.08 Evaluate production needs for microphone applications.

02.09 Demonstrate proficiency with multi-track, multi-channel mixing consoles.

02.10 Formulate strategies for electronic editing.

02.11 Formulate strategies for multi-track recording to industry standards.

02.12 Configure audio recording systems for the optimal and appropriate use of signal processing equipment.

02.13 Engineer a recording session and prepare the appropriate documentation.

02.14	Mix multi-track recordings in a variety of multichannel audio formats, from 2-channel stereo to high channel counts like 5.1, 7.1 and 9.1.
02.15	Configure audio equipment for optimal musical mix.
02.16	Create a mixing plan.
02.17	Evaluate the quality of multi-track recording.
02.18	Interpret the audio needs of the end user.
02.19	Supervise equipment operators.
02.20	Evaluate the quality of the final mix according to industry standards.
03.0	Demonstrate understanding of the requirements for set up and operation of a sound reinforcement system. The student will be able to:
03.01	Demonstrate basic understanding of audio electroacoustic concepts (e.g., headroom, biasing, distortion, equalization, frequency response, etc.).
03.02	Demonstrate basic understanding of electronics (Ohm's Law, Power equation, resistivity and conductivity, Impedance, etc.).
03.03	Demonstrate a good understanding of the decibel as a relative scale, and the differences and conversions of the different types of decibel used in the industry (dB SPL, dBu, dBV, dBFS, etc.), along with the different standard reference levels (-18 dBFS EBU, -20 dBFS SMPTE, +4 dBu VU, etc.).
03.04	Demonstrate basic understanding of acoustics.
03.05	Demonstrate knowledge of the principles of operation of analog/digital devices (block diagram).
03.06	Demonstrate basic understanding of audio signal flow in an analog or digital chain.
03.07	Formulate strategies for audio reinforcement of music productions.
03.08	Evaluate performance needs.
03.09	Evaluate the technical needs appropriate for given spaces.
03.10	Configure a sound reinforcement system to meet performance needs.
03.11	Analyze various audio qualities to achieve the proper sound mix.
03.12	Perform transactions with audio suppliers.
03.13	Design a plot for proper microphone and speaker selection and placement.
04.0	Perform transactions with music industry suppliers. The student will be able to:

04.01	Research the sources for required equipment, supplies and educational materials.
04.02	Differentiate between the levels of quality in the hierarchy of manufacturers, distributors and suppliers.
04.03	Evaluate the technical specifications of audio-related products.
04.04	Execute the purchase of audio equipment, supplies and educational materials.
05.0	Demonstrate employability skills. The student will be able to:
05.01	Create and write a résumé and cover letter.
05.02	Prepare and compile a work portfolio, demo, and/or recording.
05.03	Identify acceptable work habits.
05.04	Demonstrate competence in job interview techniques.
05.05	Formulate strategy post-graduation.
05.06	Generate a career plan.
05.07	Demonstrate knowledge of the Federal Hazard Communication regulation 29 CFR 1910.1200.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Audio Technology
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0610020303
Program Type	College Credit Certificate (CCC)
Program Length	15 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as a sound technician or recording technician, or to provide supplemental training for persons previously or currently employed in these occupations. The content includes, but is not limited to, set up and configuration of a computer for audio applications, and the operation of basic reproduction, reinforcement and recording audio equipment.

This certificate program is part of the Music and Sound Production Technology AS degree program (1650091300).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate set-up and configuration of a computer for audio applications.
- 02.0 Understand the operation of basic reproduction, reinforcement and recording audio equipment.
- 03.0 Demonstrate understanding of requirements for set up and operation of a sound reinforcement system.

**Florida Department of Education
Student Performance Standards**

Program Title: Audio Technology
CIP Number: 0610020303
Program Length: 15 credit hours

This certificate program is part of the Music and Sound Production Technology AS degree program (1650091300). At the completion of this program, the student will be able to:

01.0	Demonstrate set-up and configuration of a computer for audio applications. The student will be able to:
01.01	Install and configure software related to audio programs.
01.02	Demonstrate basic knowledge of computer system requirements.
01.03	Install basic peripheral devices related to audio programs.
01.04	Demonstrate working knowledge of digital multitrack transmission systems such as MADI, and of Audio over IP such as DANTE.
01.05	Configure a digital audio matrix.
01.06	Configure multichannel digital input and output (I/O) interfaces.
01.07	Setup and configure cloud-based recording and collaboration systems.
01.08	Configure digital project studio systems.
02.0	Understand the operation of basic reproduction, reinforcement and recording audio equipment. The student will be able to:
02.01	Assess the audio technology needs of a music production (Pre-Production).
02.02	Evaluate available audio resources.
02.03	Select and configure appropriate hardware and software.
02.04	Formulate strategies for producing multi-track recording.
02.05	Evaluate production needs for microphone applications.
02.06	Demonstrate proficiency with multi-track, multi-channelled mixing consoles.
02.07	Formulate strategies for electronic editing.
02.08	Configure audio recording systems for optimal and appropriate use of signal processing equipment.

02.09	Engineer a recording session and prepare appropriate documentation.
02.10	Mix multi-track recordings in a variety of multichannel audio formats, from 2-channel stereo to high channel counts like 5.1, 7.1 and 9.1.
02.11	Configure audio equipment for optimal musical and other types of sound mix.
02.12	Create a mixing plan.
02.13	Evaluate the quality of multi-track recording.
02.14	Interpret audio needs for end user.
02.15	Supervise equipment operator.
02.16	Evaluate quality of the final mix to industry standards.
03.0	Demonstrate understanding of requirements for set up and operation of a sound reinforcement system. The student will be able to:
03.01	Demonstrate basic understanding of audio electroacoustic concepts (head room, biasing, distortion, equalization, frequency response, etc.).
03.02	Demonstrate basic understanding of electronics (Ohm's Law, Power equation, resistivity and conductivity, Impedance, etc.).
03.03	Demonstrate a good understanding of the decibel as a relative scale, and the differences and conversions of the different types of decibel used in the industry (dB SPL, dBu, dBV, dBFS, etc.), along with the different standard reference levels (-18 dBFS EBU, -20 dBFS SMPTE, +4 dBu VU, etc.).
03.04	Demonstrate basic understanding of acoustics.
03.05	Demonstrate knowledge of principles of operation of analog/digital devices (block diagram).
03.06	Demonstrate basic understanding of audio signal flow in an analog or digital chain.
03.07	Formulate strategies for audio reinforcement of music productions.
03.08	Evaluate performance needs.
03.09	Evaluate technical needs as appropriate to given spaces.
03.10	Configure a sound reinforcement system to meet performance needs.
03.11	Analyze various audio qualities to achieve proper sound mix.
03.12	Perform transactions with audio suppliers.
03.13	Design a plot for proper microphone and speaker selection and placement.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Music Production
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0610020304
Program Type	College Credit Certificate (CCC)
Program Length	12 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment in music production occupations or to provide supplemental professional training for persons previously or currently employed in this field. The content includes, but is not limited to, instruction that prepares individuals for positions such as music production specialists, audio technicians, audio assistants, media and communication equipment workers, music editors, and archivists and related workers.

This certificate program is part of the Music and Sound Production Technology AS degree program (1650091300).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and the relevant technical knowledge and skills needed to prepare for further education and careers in the Arts A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of basic musical skills.
- 02.0 Demonstrate competence in basic musical instrument skills.
- 03.0 Demonstrate the application of control protocols and their relationship to equipment used in the music industry.
- 04.0 Demonstrate set-up and configuration of a computer for audio applications.
- 05.0 Demonstrate employability skills.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Music Production
CIP Number: 0610020304
Program Length: 12 credit hours

This certificate program is part of the Music and Sound Production Technology AS degree program (1650091300). At the completion of this program, the student will be able to:

01.0	Demonstrate knowledge of basic musical skills. The student will be able to:
01.01	Demonstrate knowledge of musical structure.
01.02	Apply listening skills to live and recorded music.
01.03	Identify the performance characteristics of musical instruments.
01.0	Demonstrate competence in basic musical instrument skills. The student will be able to:
01.01	Demonstrate basic knowledge of scales and chord structure.
01.02	Follow basic musical notation.
01.03	Demonstrate basic knowledge of a musical instrument.
02.0	Demonstrate the application of control protocols and their relationship to equipment used in the music industry. The student will be able to:
02.01	Demonstrate an understanding of Musical Instrument Digital Interface (MIDI).
02.02	Demonstrate proficiency in using MIDI instruments to record sounds using a digital sampler.
02.03	Utilize a computer and multiple MIDI instruments.
02.04	Record a single sound track; utilize software to add multiple sound tracks and change MIDI voices.
02.05	Demonstrate an understanding of MIDI and other control protocols in the recording studio.
02.06	Troubleshoot MIDI and control communication problems.
03.0	Demonstrate set-up and configuration of a computer for audio applications. The student will be able to:
03.01	Install and configure software related to audio programs.
03.02	Demonstrate basic knowledge of computer system requirements.

03.03	Install the basic peripheral devices related to audio programs.
04.0	Demonstrate employability skills. The student will be able to:
04.01	Create and write a résumé and cover letter.
04.02	Prepare and compile a work portfolio, demo, and/or recording.
04.03	Identify acceptable work habits.
04.04	Demonstrate competence in job interview techniques.
04.05	Formulate strategy for post-graduation.
04.06	Generate a career plan.
04.07	Demonstrate knowledge of the Federal Hazard Communication regulation 29 CFR 1910.1200.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Graphic Design Support
Career Cluster: Arts, A/V Technology and Communication

CCC	
CIP Number	0611080302
Program Type	College Credit Certificate (CCC)
Program Length	15 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as a graphic design assistant, graphic production artist, or to provide supplemental training for persons previously or currently employed in these occupations.

This certificate program is part of the Graphics Technology AS degree program (1611080300).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, communication skills, illustration, design concepts and theory, typography skills, production skills, color theories, utilization of computers to produce electronic content, presentation procedures, and employability skills.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate effective interpersonal communication skills.
- 02.0 Perform raster-based and vector-based visual solutions.
- 03.0 Formulate concepts/theories.
- 04.0 Apply design and color theories.
- 05.0 Demonstrate technical and creative uses of typography.
- 06.0 Demonstrate production skills in web and print design.
- 07.0 Interpret printing processes.
- 08.0 Demonstrate knowledge of current industry standards, practices, and techniques.
- 09.0 Demonstrate industry-level presentation techniques.
- 10.0 Utilize computer hardware, software, networks and peripherals for the production of electronic content.
- 11.0 Create electronic interfaces.
- 12.0 Demonstrate employability skills.

**Florida Department of Education
Student Performance Standards**

Program Title: Graphic Design Support
CIP Number: 0611080302
Program Length: 15 credit hours

This certificate program is part of the Graphics Technology AS degree program (1611080300). At the completion of this program, the student will be able to:

01.0 Demonstrate effective interpersonal communication skills. The student will be able to:

01.01 Read and interpret written and oral instructions.

01.02 Prepare written correspondence.

01.03 Demonstrate effective oral communication and presentation skills.

02.0 Create raster-based and vector-based visual solutions. The student will be able to:

02.01 Demonstrate knowledge of methods and materials.

03.0 Formulate concepts/theories. The student will be able to:

03.01 Solve problems by selecting the appropriate styles or techniques.

03.02 Apply principles of design.

03.03 Demonstrate the design process.

04.0 Apply design and color theories. The student will be able to:

04.01 Create mockups, dummies, and comprehensive layouts in a variety of formats.

04.02 Evaluate the use of design principles for a variety of graphic design applications.

05.0 Demonstrate technical and creative uses of typography. The student will be able to:

05.01 Demonstrate application of typographical specifications.

05.02 Apply correct lettering and line spacing for typesetting.

05.03 Develop a working knowledge of type spacing.

05.04 Demonstrate the principles of typography in a design project.

06.0	Demonstrate production skills in web and print design. The student will be able to:
06.01	Size photographs and illustrations.
06.02	Demonstrate correct preparation of electronic files for various printed and electronic outputs.
06.03	Utilize appropriate industry-standard software to execute design solutions.
07.0	Interpret printing processes. The student will be able to:
07.01	Explain basic print processes.
08.0	Demonstrate knowledge of current industry standards, practices, and techniques. The student will be able to:
08.01	Use industry terminology.
08.02	Explain the importance of meeting deadlines.
08.03	Demonstrate the ability to adjust to work conditions.
09.0	Demonstrate industry-level presentation techniques. The student will be able to:
09.01	Demonstrate mounting and matting procedures.
09.02	Demonstrate industry presentation procedures and techniques.
10.0	Utilize computer hardware, software, networks, and peripherals for the production of electronic content. The student will be able to:
10.01	Demonstrate an understanding of platforms, operating systems, coding languages, hardware, software, peripherals, network issues, and compatibility.
11.0	Create electronic interfaces. The student will be able to:
11.01	Create vector-based or raster-based layouts that appropriate translate to a variety of electronic formats.
12.0	Demonstrate employability skills. The student will be able to:
12.01	Identify acceptable work habits.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Graphic Design Production
Career Cluster: Arts, A/V Technology and Communication

CCC	
CIP Number	0611080303
Program Type	College Credit Certificate (CCC)
Program Length	24 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as graphic designers or graphic design assistants; this program introduces students to the principles of design and photography with an emphasis on computer-based design, layout, multimedia, and interactive design.

This certificate program is part of the Graphics Technology AS degree program (1611080300).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, communication skills, team skills, safe and efficient work practices, creation of advertising layouts, illustration, design concepts and theory, typography skills, production skills, color theories, utilization of computers to produce electronic content, presentation procedures, and employability skills.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate effective interpersonal communication skills.
- 02.0 Demonstrate the ability to collaborate with others.
- 03.0 Demonstrate safe and efficient work practices.
- 04.0 Create raster-based and vector-based visual solutions.
- 05.0 Formulate concepts/theories.
- 06.0 Apply design and color theories.
- 07.0 Demonstrate technical and creative uses of typography.
- 08.0 Create advertising design solutions.
- 09.0 Demonstrate production skills in web and print design.
- 10.0 Interpret printing processes.
- 11.0 Demonstrate knowledge of current industry standards, practices, and techniques.
- 12.0 Demonstrate industry-level presentation techniques.
- 13.0 Utilize computer hardware, software, networks and peripherals for the production of electronic content.
- 14.0 Create electronic interfaces.
- 15.0 Demonstrate employability skills.

**Florida Department of Education
Student Performance Standards**

Program Title: Graphic Design Production
CIP Number: 0611080303
Program Length: 24 credit hours

This certificate program is part of the Graphics Technology AS degree program (1611080300). At the completion of this program, the student will be able to:

01.0 Demonstrate effective interpersonal communication skills. The student will be able to:

01.01 Read and interpret written and oral instructions.

01.02 Prepare written correspondence.

01.03 Demonstrate effective oral communication and presentation skills.

01.04 Present work to an audience.

02.0 Demonstrate the ability to collaborate with others. The student will be able to:

02.01 Demonstrate the ability to work as part of a team.

03.0 Demonstrate safe and efficient work practices. The student will be able to:

03.01 Demonstrate proper care of equipment.

03.02 Demonstrate typical workplace tasks in a timely manner.

04.0 Create raster-based and vector-based visual solutions. The student will be able to:

04.01 Demonstrate versatile styles and techniques to solve visual problems.

04.02 Demonstrate knowledge of methods and materials.

04.03 Apply design fundamentals to raster-based and vector-based solutions to effectively achieve a visual communication goal.

05.0 Formulate concepts/theories. The student will be able to:

05.01 Solve problems by selecting the appropriate styles or techniques.

05.02 Display creative talent and ingenuity.

05.03 Apply principles of design.

05.04	Demonstrate the design process.
06.0	Apply design and color theories. The student will be able to:
06.01	Create a design utilizing the appropriate technical color application for the intended output.
06.02	Create mockups, dummies, and comprehensive layouts in a variety of formats.
06.03	Evaluate the use of design principles for a variety of graphic design applications.
06.04	Select and apply appropriate design principles for effective visual communication.
06.05	Apply knowledge of color theory to design solutions.
06.06	Develop solutions for interactive media that demonstrate awareness of the user experience.
07.0	Demonstrate technical and creative uses of typography. The student will be able to:
07.01	Develop and demonstrate appropriate use of type styles and letter forms.
07.02	Demonstrate application of typographical specifications.
07.03	Apply type construction design.
07.04	Apply correct lettering and line spacing for typesetting.
07.05	Develop a working knowledge of type spacing.
07.06	Demonstrate the principles of typography in a design project.
07.07	Utilize a desktop computer and industry standard software for type production.
07.08	Develop and properly utilize a typographic grid.
08.0	Create advertising design solutions. The student will be able to:
08.01	Identify advertising needs and develop appropriate solutions.
08.02	Produce comprehensive layouts for advertising in a variety of print, packaging, outdoor, and electronic formats.
09.0	Demonstrate production skills in web and print design. The student will be able to:
09.01	Size photographs and illustrations.
09.02	Demonstrate correct preparation of electronic files for various printed and electronic outputs.

09.03	Utilize appropriate industry-standard software to execute design solutions.
10.0	Interpret printing processes. The student will be able to:
10.01	Determine methods of printing; include specialized printing methods.
10.02	Select appropriate substrates and inks for projects.
10.03	Explain color separation processes.
10.04	Identify and specify half-tone and line negatives.
10.05	Interpret signature and imposition procedures.
10.06	Analyze and identify methods of proofing.
10.07	Explain basic print processes.
10.08	Understand how various printing processes require different electronic pre-press techniques.
11.0	Demonstrate knowledge of current industry standards, practices, and techniques. The student will be able to:
11.01	Explain copyright procedures.
11.02	Use industry terminology.
11.03	Identify industry practices and procedures.
11.04	Explain the importance of meeting deadlines.
11.05	Demonstrate the ability to adjust to work conditions.
12.0	Demonstrate industry-level presentation techniques. The student will be able to:
12.01	Demonstrate mounting and matting procedure.
12.02	Demonstrate industry presentation procedures and techniques.
13.0	Utilize computer hardware, software, networks, and peripherals for the production of electronic content. The student will be able to:
13.01	Demonstrate an understanding of platforms, operating systems, coding languages, hardware, software, peripherals, network issues, and compatibility.
14.0	Create electronic interfaces. The student will be able to:
14.01	Create vector-based or raster-based layouts that appropriately translate to a variety of electronic formats.

15.0	Demonstrate employability skills. The student will be able to:
15.01	Identify acceptable work habits.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

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Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Interactive Media Production
Career Cluster: Arts, A/V Technology and Communication

CCC	
CIP Number	0611080304
Program Type	College Credit Certificate (CCC)
Program Length	24 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to provide students with a foundation in interactive media techniques and production; students will gain competency in web-based and interactive design.

This certificate program is part of the Graphics Technology AS degree program (1611080300).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, communication skills, team skills, illustration, design concepts and theory, typography skills, production skills, creation of advertising layouts, color theories, utilization of computers to produce electronic content, presentation procedures, and employability skills.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate effective interpersonal communication skills.
- 02.0 Demonstrate the ability to collaborate with others.
- 03.0 Demonstrate safe and efficient work practices.
- 04.0 Create raster-based and vector-based visual solutions.
- 05.0 Formulate concepts/theories.
- 06.0 Apply design and color theories.
- 07.0 Demonstrate technical and creative uses of typography.
- 08.0 Create advertising design solutions.
- 09.0 Demonstrate production skills in web and print design.
- 10.0 Demonstrate knowledge of current industry standards, practices, and techniques.
- 11.0 Demonstrate industry-level presentation techniques.
- 12.0 Utilize computer hardware, software, networks and peripherals for the production of electronic content.
- 13.0 Create electronic interfaces.
- 14.0 Demonstrate employability skills.

**Florida Department of Education
Student Performance Standards**

Program Title: Interactive Media Production
CIP Number: 0611080304
Program Length: 24 credit hours

This certificate program is part of the Graphics Technology AS degree program (1611080300). At the completion of this program, the student will be able to:

01.0 Demonstrate effective interpersonal communication skills. The student will be able to:

01.01 Read and interpret written and oral instructions.

01.02 Demonstrate effective oral communication and presentation skills.

01.03 Present work to an audience.

02.0 Demonstrate the ability to collaborate with others. The student will be able to:

02.01 Demonstrate the ability to work as part of a team.

03.0 Demonstrate safe and efficient work practices. The student will be able to:

03.01 Demonstrate proper care of equipment.

03.02 Perform typical workplace tasks in a timely manner.

04.0 Create raster-based and vector-based visual solutions. The student will be able to:

04.01 Demonstrate versatile styles and techniques to solve visual problems.

04.02 Demonstrate knowledge of methods and materials.

04.03 Execute raster and vector solutions in accordance with industry technical requirements for print and/or digital formats.

05.0 Formulate concepts/theories. The student will be able to:

05.01 Solve problems by selecting the appropriate styles or techniques.

05.02 Display creative talent and ingenuity.

05.03 Apply principles of design.

05.04 Demonstrate the design process.

06.0	Apply design and color theories. The student will be able to:
06.01	Create a design utilizing the appropriate technical color application for the intended output.
06.02	Create mockups, dummies, and comprehensive layouts in a variety of formats.
06.03	Evaluate the use of design principles for a variety of graphic design applications.
06.04	Select and apply appropriate design principles for effective visual communication.
06.05	Apply knowledge of color theory to design solutions.
06.06	Develop solutions for interactive media that demonstrate awareness of the user experience.
07.0	Demonstrate technical and creative uses of typography. The student will be able to:
07.01	Develop and demonstrate appropriate use of type styles and letter forms.
07.02	Demonstrate application of typographical specifications.
07.03	Apply type construction design.
07.04	Apply correct lettering and line spacing for typesetting.
07.05	Demonstrate the principles of typography in a design project.
07.06	Utilize a desktop computer and industry standard software for type production.
08.0	Create advertising design solutions. The student will be able to:
08.01	Identify advertising needs and develop appropriate solutions.
09.0	Demonstrate production skills in web and print design. The student will be able to:
09.01	Size photographs and illustrations.
09.02	Demonstrate correct preparation of electronic files for various printed and electronic outputs.
09.03	Utilize appropriate industry-standard software to execute design solutions.
10.0	Demonstrate knowledge of current industry standards, practices, and techniques. The student will be able to:
10.01	Explain copyright procedures.
10.02	Use industry terminology.

10.03	Identify industry practices and procedures.
10.04	Explain the importance of meeting deadlines.
10.05	Learn how to cope with stress.
11.0	Demonstrate industry-level presentation techniques. The student will be able to:
11.01	Demonstrate industry presentation procedures and techniques.
12.0	Utilize computer hardware, software, networks, and peripherals for the production of electronic content. The student will be able to:
12.01	Demonstrate an understanding of platforms, operating systems, coding languages, hardware, software, peripherals, network issues, and compatibility.
13.0	Create electronic interfaces. The student will be able to:
13.01	Create vector-based or raster-based layouts that appropriately translate to a variety of electronic formats.
13.02	Create interactive content for websites.
14.0	Demonstrate employability skills. The student will be able to:
14.01	Identify acceptable work habits.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Interactive Media Support
Career Cluster: Arts, A/V Technology and Communication

CCC	
CIP Number	0611080305
Program Type	College Credit Certificate (CCC)
Program Length	15 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as graphic design assistants or to supplement training for persons previously or currently employed in this occupation.

This certificate program is part of the Graphics Technology AS degree program (1611080300).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, communication skills, illustration, design concepts and theory, typography skills, production skills, color theories, utilization of computers to produce electronic content, presentation procedures, and employability skills.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate effective interpersonal communication skills.
- 02.0 Create raster-based and vector-based visual solutions.
- 03.0 Formulate concepts/theories.
- 04.0 Apply design and color theories.
- 05.0 Demonstrate technical and creative uses of typography.
- 06.0 Demonstrate production skills in web and print design.
- 07.0 Demonstrate knowledge of current industry standards, practices, and techniques.
- 08.0 Apply marketing/advertising principles for effective visual communication.
- 09.0 Demonstrate industry-level presentation techniques.
- 10.0 Utilize computer hardware, software, networks and peripherals for the production of electronic content.
- 11.0 Create electronic interfaces.
- 12.0 Demonstrate employability skills.

**Florida Department of Education
Student Performance Standards**

Program Title: Interactive Media Support
CIP Number: 0611080305
Program Length: 15 credit hours

This certificate program is part of the Graphics Technology AS degree program (1611080300). At the completion of this program, the student will be able to:

01.0 Demonstrate effective interpersonal communication skills. The student will be able to:

01.01 Read and interpret written and oral instructions.

01.02 Prepare written correspondence.

01.03 Demonstrate effective oral communication and presentation skills.

01.04 Present work to an audience.

02.0 Create raster-based and vector-based visual solutions. The student will be able to:

02.01 Demonstrate knowledge of methods and materials.

03.0 Formulate concepts/theories. The student will be able to:

03.01 Solve problems by selecting the appropriate styles or techniques.

03.02 Display creative talent and ingenuity.

03.03 Apply principles of design.

03.04 Demonstrate the design process.

04.0 Apply design and color theories. The student will be able to:

04.01 Create a design utilizing the appropriate technical color application for the intended output.

04.02 Create mockups, dummies, and comprehensive layouts in a variety of formats.

04.03 Evaluate the use of design principles for a variety of graphic design applications.

04.04 Apply knowledge of color theory to design solutions.

04.05 Develop solutions for interactive media that demonstrate awareness of the user experience.

05.0	Demonstrate technical and creative uses of typography. The student will be able to:
05.01	Develop and demonstrate appropriate use of type styles and letter forms.
05.02	Demonstrate application of typographical specifications.
05.03	Apply correct lettering and line spacing for typesetting.
05.04	Develop a working knowledge of type spacing.
05.05	Demonstrate the principles of typography in a design project.
06.0	Demonstrate production skills in web and print design. The student will be able to:
06.01	Size photographs and illustrations.
06.02	Demonstrate correct preparation of electronic files for various printed and electronic outputs.
06.03	Utilize appropriate industry-standard software to execute design solutions.
07.0	Demonstrate knowledge of current industry standards, practices, and techniques. The student will be able to:
07.01	Use industry terminology.
07.02	Identify industry practices and procedures.
07.03	Explain the importance of meeting deadlines.
07.04	Demonstrate the ability to adjust to work conditions.
08.0	Apply marketing/advertising principles for effective visual communication. The student will be able to:
08.01	Identify the target audience.
09.0	Demonstrate industry-level presentation techniques. The student will be able to:
09.01	Prepare an industry-level professional portfolio appropriate for the type of work created.
10.0	Utilize computer hardware, software, networks, and peripherals for the production of electronic content. The student will be able to:
10.01	Demonstrate an understanding of platforms, operating systems, coding languages, hardware, software, peripherals, network issues, and compatibility.
11.0	Create electronic interfaces. The student will be able to:
11.01	Create vector-based or raster-based layouts that appropriately translate to a variety of electronic formats.

11.02 Create interactive content for websites.
12.0 Demonstrate employability skills. The student will be able to:
12.01 Identify acceptable work habits.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Network Communications (LAN)
Career Cluster: Arts, A/V Technology and Communication

CCC	
CIP Number	0611100206
Program Type	College Credit Certificate (CCC)
Program Length	18 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program is designed to prepare students for employment as a network support technician, telecommunications technician, field support engineer, sub-system specialist, communications specialist, or to provide supplemental training to persons previously or currently employed in these occupations.

This specialization content includes, but is not limited to, basic electronics skills, telephony cabling and network communications.

This certificate program is part of the Telecommunication Engineering Technology AS degree program (1615030302).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of basic electronics.
- 02.0 Demonstrate proficiency in network communications.
- 03.0 Demonstrate proficiency in the analysis of telephony communications systems.

**Florida Department of Education
Student Performance Standards**

Program Title: Network Communications (LAN)
CIP Number: 0611100206
Program Length: 18 credit hours

This certificate program is part of the Telecommunication Engineering Technology AS degree program (1615030302). At the completion of this program, the student will be able to:

01.0 Demonstrate knowledge of basic electronics. The student will be able to:

- 01.01 Perform various types of soldering.
- 01.02 Perform various types of wiring and cable terminations.
- 01.03 Demonstrate knowledge of AC/DC concepts and applications.
- 01.04 Demonstrate knowledge of computer systems and basic applications.
- 01.05 Demonstrate use of basic test and measurement equipment.
- 01.06 Understand and demonstrate safety rules.
- 01.07 Demonstrate understanding of digital fundamentals.

02.0 Demonstrate proficiency in network communications. The student will be able to:

- 02.01 Describe the layers of a communications system.
- 02.02 Describe the protocol requirements necessary to ensure the transmission of a data message.
- 02.03 Describe, from a system standpoint, the characteristics of serial communications standards.
- 02.04 Analyze and troubleshoot communications between computers.
- 02.05 Compare serial communications with parallel and other standards.
- 02.06 Describe, analyze, troubleshoot and demonstrate the operation of network access devices.
- 02.07 Demonstrate use of a network management system.
- 02.08 Identify the capabilities of a telephone circuit on a data communications system.
- 02.09 Describe LAN topologies as applied to data networks.

02.10	Design, connect and troubleshoot a Local Area Network (LAN).
02.11	Fabricate and test LAN cabling.
02.12	Describe basic data firewalls, encryption and decryption methods.
02.13	Describe the general characteristics and operations of frame relay, DSL, and ISDN as they apply to data networks.
02.14	Describe the general characteristics and operations of routers and switches as they apply to data networks and systems.
03.0	Demonstrate proficiency in the analysis of telephony communication systems. The student will be able to:
03.01	Describe the general characteristics of a telephone subscriber loop.
03.02	Describe, evaluate and analyze the operation of a MODEM in the originate and answer modes.
03.03	Describe the various functions of a BORSCHT (Battery Overload Ring Supervision Coding Hybrid Test) circuit.
03.04	Describe and evaluate the application of fiber optic systems to telecommunications.
03.05	Describe the operation of an integrated voice and data system.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Network Communications (WAN)
Career Cluster: Arts, A/V Technology and Communication

CCC	
CIP Number	0611100207
Program Type	College Credit Certificate (CCC)
Program Length	18 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program is designed to prepare students for employment as a WAN support specialist, network designer, WAN technician, network support technician, field support engineer, or to provide supplemental training to persons previously or currently employed in these occupations. This specialization content includes, but is not limited to, basic electronics skills, telephony cabling and network communications.

This specialization content includes, but is not limited to, basic electronics skills, telephony cabling and network communications.

This certificate program is part of the Telecommunication Engineering Technology AS degree program (1615030302).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of basic electronics.
- 02.0 Demonstrate proficiency in network communications.
- 03.0 Demonstrate proficiency in the analysis of telephony communication systems.

**Florida Department of Education
Student Performance Standards**

Program Title: Network Communications (WAN)
CIP Number: 0611100207
Program Length: 18 credit hours

This certificate program is part of the Telecommunication Engineering Technology AS degree program (1615030302). At the completion of this program, the student will be able to:

01.0 Demonstrate knowledge of basic electronics. The student will be able to:

- 01.01 Perform various types of soldering.
- 01.02 Perform various types of wiring and cable terminations.
- 01.03 Demonstrate knowledge of AC/DC concepts and applications.
- 01.04 Demonstrate knowledge of computer systems and basic applications.
- 01.05 Demonstrate use of basic test and measurement equipment.
- 01.06 Understand and demonstrate safety rules.
- 01.07 Demonstrate understanding of digital fundamentals.

02.0 Demonstrate proficiency in network communications. The student will be able to:

- 02.01 Describe the layers of a communications system.
- 02.02 Describe the protocol requirements necessary to ensure the transmission of a data message.
- 02.03 Describe, from a system standpoint, the characteristics of serial communications standards.
- 02.04 Analyze and troubleshoot communications between computers.
- 02.05 Compare serial communications with parallel and others.
- 02.06 Describe, analyze, troubleshoot and demonstrate the operation of network access devices.
- 02.07 Demonstrate use of a network management system.
- 02.08 Identify the capabilities of a telephone circuit on a data communications system.
- 02.09 Describe WAN topologies as applied to data networks.

02.10	Describe basic data firewalls, encryption and decryption methods.
02.11	Describe the general characteristics and operations of frame relay, DSL, and ISDN as they apply to data networks.
02.12	Describe the characteristics of frame relay network management.
02.13	Describe the general characteristics and operations of routers and switches as they apply to data networks and systems.
02.14	Describe the general characteristics and design capabilities of the T-carrier system.
02.15	Analyze the network design criteria of T-1 systems.
02.16	Describe the general characteristics and design capabilities of the Synchronous Optical Network (SONET).
02.17	Describe the characteristics of the Asynchronous Transfer Mode (ATM) network.
02.18	Describe the characteristics of high-speed public data networks.
02.19	Apply the theory of wide area network design to systems.
03.0	Demonstrate proficiency in the analysis of telephony communication systems. The student will be able to:
03.01	Describe the general characteristics of a telephone subscriber loop.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: **Wireless Communications**
Career Cluster: **Arts, A/V Technology and Communication**

CCC	
CIP Number	0615030508
Program Type	College Credit Certificate (CCC)
Program Length	18 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program is designed to prepare students for employment as a wireless installer, wireless technician, wireless field service technician, or to provide supplemental training to persons previously or currently employed in these occupations.

This specialization content includes, but is not limited to, basic electronics skills, transmission and distribution systems, telephony communication systems, digital communications, data communications and network communications.

This certificate program is part of the Telecommunication Engineering Technology AS degree program (1615030302).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of basic electronics.
- 02.0 Demonstrate proficiency in basic operation and application of transmitters, receivers, and transmission and distribution systems.
- 03.0 Demonstrate proficiency in design and analysis of digital communications systems.
- 04.0 Demonstrate proficiency in the analysis of transmission and distribution systems.
- 05.0 Demonstrate proficiency in network communications.
- 06.0 Demonstrate proficiency in the analysis of telephony communication systems.

**Florida Department of Education
Student Performance Standards**

Program Title: **Wireless Communications**
CIP Number: **0615030508**
Program Length: **18 credit hours**

This certificate program is part of the Telecommunication Engineering Technology AS degree program (1615030302). At the completion of this program, the student will be able to:

01.0	Demonstrate knowledge of basic electronics. The student will be able to:
01.01	Perform various types of soldering.
01.02	Perform various types of wiring and cable terminations.
01.03	Demonstrate knowledge of AC/DC concepts and applications.
01.04	Demonstrate knowledge of computer systems and basic applications.
01.05	Demonstrate use of basic test and measurement equipment.
01.06	Understand and demonstrate safety rules.
01.07	Demonstrate understanding of digital fundamentals.
02.0	Demonstrate proficiency in basic operation and application of transmitters, receivers, and transmission and distribution systems. The student will be able to:
02.01	Describe the principles and operation of amplitude modulation and frequency modulation.
02.02	Demonstrate an understanding of block diagrams and components of transmitter receiver circuits including mixers, IF amplifiers, local oscillators, modulators and demodulators.
02.03	Identify, measure, analyze and troubleshoot AM and FM transmitter/receiver circuits including mixers, IF amplifiers, local oscillators, modulators, demodulators and speech amplifiers.
02.04	Analyze, troubleshoot, and maintain transmitters and receivers, to include heterodyning, frequency synthesis, phase-locked-loop, filtering and automatic control circuits.
02.05	Describe the components and concepts of transmission systems: antennas, fiber optics, coax, copper, microwave, satellite, feed lines, and wave guides.
02.06	Calculate transmission line characteristics and understand impedance matching.
02.07	Analyze and describe the concepts of radio wave propagation and radiation fields.
02.08	Test, set up and adjust antenna systems using a power meter, network analyzer, and SWR meter.

02.09	Describe government rules, regulations, and permits.
03.0	Demonstrate proficiency in design and analysis of digital communications systems. The student will be able to:
03.01	Describe industry standards in digital communications.
04.0	Demonstrate proficiency in the analysis of transmission and distribution systems. The student will be able to:
04.01	Splice and terminate cabling systems.
04.02	Describe gain and loss concepts as applied to transmission and distribution systems.
05.0	Demonstrate proficiency in network communications. The student will be able to:
05.01	Describe the layers of a communications system.
05.02	Describe the protocol requirements necessary to ensure the transmission of a data message.
05.03	Describe, analyze, troubleshoot and demonstrate the operation of network access devices.
05.04	Describe wireless topologies as applied to data networks.
05.05	Design, connect and troubleshoot a wireless network.
05.06	Describe the operation of a short-range wireless network (i.e., Blue Tooth, IEEE 802.11).
05.07	Describe the operation of a long-range wireless network (i.e., PCS, digital messaging, 3G Technology).
05.08	Describe the operation of a cellular communications network.
05.09	Describe and analyze error detection and correction methods used in data communication systems.
06.0	Demonstrate proficiency in the analysis of telephony communication systems. The student will be able to:
06.01	Describe the general characteristics of a telephone subscriber loop.
06.02	Describe, demonstrate and analyze the operation of tone dialing, DTMF (Dual Tone Multi Frequency), pulse dialing and ringing circuits.
06.03	Describe, evaluate and analyze the operation of a MODEM in the originate and answer modes.
06.04	Describe the various functions of a BORSCHT (Battery Overload Ring Supervision Coding Hybrid Test) circuit.
06.05	Describe, evaluate and analyze the operation of a Subscriber Loop Interface Circuit (SLIC).
06.06	Describe, evaluate and analyze the operation of a Time-Slot Assignment Circuit (TSAC).

06.07	Describe and evaluate the application of fiber optic systems to telecommunications.
06.08	Analyze and describe applications of speech synthesis and recognition circuits to telecommunications.
06.09	Terminate and test telephony cable.
06.10	Describe the operation of an integrated voice and data system.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: **Television System Support**
Career Cluster: **Arts, A/V Technology and Communication**

CCC	
CIP Number	0647010303
Program Type	College Credit Certificate (CCC)
Program Length	24 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program is designed to prepare students for employment as a master control operator, senior cable installer, field service specialist, or to provide supplemental training to persons previously or currently employed in these occupations. This specialization content includes, but is not limited to, basic electronics skills, transmitters and receivers, transmission and distribution systems, cabling, and analog and digital video systems.

This certificate program is part of the Telecommunication Engineering Technology AS degree program (1615030302).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of basic electronics.
- 02.0 Demonstrate proficiency in basic operation and application of transmitters, receivers, and transmission and distribution systems.
- 03.0 Demonstrate proficiency in the analysis of transmission and distribution systems.
- 04.0 Demonstrate proficiency in network communications.
- 05.0 Demonstrate proficiency in the analysis of telephony cabling equipment.
- 06.0 Demonstrate proficiency in the analysis of analog and digital video systems.

**Florida Department of Education
Student Performance Standards**

Program Title: **Television System Support**
CIP Number: **0647010303**
Program Length: **24 credit hours**

This certificate program is part of the Telecommunication Engineering Technology AS degree program (1615030302). At the completion of this program, the student will be able to:

01.0	Demonstrate knowledge of basic electronics. The student will be able to:
01.01	Perform various types of soldering.
01.02	Perform various types of wiring and cable terminations.
01.03	Demonstrate knowledge of AC/DC concepts and applications.
01.04	Demonstrate knowledge of computer systems and basic applications.
01.05	Demonstrate use of basic test and measurement equipment.
01.06	Understand and demonstrate safety rules.
01.07	Demonstrate understanding of digital fundamentals.
02.0	Demonstrate proficiency in basic operation and application of transmitters, receivers, and transmission and distribution systems. The student will be able to:
02.01	Calculate transmission line characteristics and understand impedance matching.
02.02	Test, set up and adjust antenna systems using a power meter, network analyzer, and SWR meter.
02.03	Describe government rules, regulations, and permits.
03.0	Demonstrate proficiency in the analysis of transmission and distribution systems. The student will be able to:
03.01	Analyze and demonstrate the operation of optical devices.
03.02	Splice and terminate cabling systems.
03.03	Analyze and demonstrate multiplex transmission including use of full and half duplex communications.
03.04	Describe gain and loss concepts as applied to transmission and distribution systems.

03.05	Operate satellite communication systems.
04.0	Demonstrate proficiency in network communications. The student will be able to:
04.01	Fabricate and test LAN cabling.
05.0	Demonstrate proficiency in the analysis of telephony cabling equipment. The student will be able to:
05.01	Describe the general characteristics of a telephone subscriber loop.
05.02	Terminate and test telephony cable.
06.0	Demonstrate proficiency in the analysis of analog and digital video systems. The student will be able to:
06.01	Describe the fundamental principles and concepts of television/video systems.
06.02	Describe the operation of the key components of a television/video system.
06.03	Analyze and describe the operation of the various sections of a DTV transmitter.
06.04	Analyze and describe the characteristics of the television signal (analog, digital, RF).
06.05	Assemble and test cables and connectors related to video/audio systems.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Cable Installation
Career Cluster: Arts, A/V Technology and Communication

CCC	
CIP Number	0647010304
Program Type	College Credit Certificate (CCC)
Program Length	12 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program is designed to prepare students for employment as a cable installer, cable tester, cable technician, or to provide supplemental training to persons previously or currently employed in these occupations. This specialization content includes, but is not limited to, basic electronics skills, transmission and distribution systems, cabling, and network communications.

This certificate program is part of the Telecommunication Engineering Technology AS degree program (1615030302).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of basic electronics.
- 02.0 Demonstrate proficiency in basic operation and application of transmitters, receivers, and transmission and distribution systems.
- 03.0 Demonstrate proficiency in the analysis of transmission and distribution systems.
- 04.0 Demonstrate proficiency in network communications.
- 05.0 Demonstrate proficiency in the analysis of telephony communication systems.
- 06.0 Demonstrate proficiency in the analysis of analog and digital video systems.

**Florida Department of Education
Student Performance Standards**

Program Title: Cable Installation
CIP Number: 0647010304
Program Length: 12 credit hours

This certificate program is part of the Telecommunication Engineering Technology AS degree program (1615030302). At the completion of this program, the student will be able to:

01.0	Demonstrate knowledge of basic electronics. The student will be able to:
01.01	Perform various types of soldering.
01.02	Perform various types of wiring and cable terminations.
01.03	Demonstrate knowledge of AC/DC concepts and applications.
01.04	Demonstrate knowledge of computer systems and basic applications.
01.05	Demonstrate use of basic test and measurement equipment.
01.06	Understand and demonstrate safety rules.
01.07	Demonstrate understanding of digital fundamentals.
02.0	Demonstrate proficiency in basic operation and application of transmitters, receivers, and transmission and distribution systems. The student will be able to:
02.01	Calculate transmission line characteristics and understand impedance matching.
02.01	Test, set up and adjust antenna systems using a power meter, network analyzer, and SWR meter.
03.0	Demonstrate proficiency in the analysis of transmission and distribution systems. The student will be able to:
03.01	Analyze and demonstrate the operation of optical devices.
03.02	Splice and terminate cabling systems.
03.03	Analyze and demonstrate multiplex transmission including use of full and half duplex communications.
03.04	Describe gain and loss concepts as applied to transmission and distribution systems.
04.0	Demonstrate proficiency in network communications. The student will be able to:

04.01	Fabricate and test LAN cabling.
05.0	Demonstrate proficiency in the analysis of telephony communication systems. The student will be able to:
05.01	Describe the general characteristics of a telephone subscriber loop.
05.02	Terminate and test telephony cable.
06.0	Demonstrate proficiency in the analysis of analog and digital video systems. The student will be able to:
06.01	Assemble and test cables and connectors related to video/audio systems.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Media/Multimedia Web Production
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0650010208
Program Type	College Credit Certificate (CCC)
Program Length	15 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as a web production assistant or a web production artist; this program also provides supplemental training for persons previously or currently employed in these occupations.

This certificate program is part of the Digital Media/Multimedia Technology AS degree program (1611080103).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

The content should include, but not be limited to analysis of end-user needs, use of digital media/multimedia computer applications, and the design and production of digital media/multimedia projects, including manipulation of video and/or animations and audio

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster: provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Create, alter and/or adjust presentations utilizing a variety of digital media/multimedia technologies.
- 02.0 Design and generate video and/or animations in multimedia project(s).
- 03.0 Utilize/Create/Produce audio technology for digital media/multimedia project(s).
- 04.0 Use computer applications for digital media/multimedia projects.
- 05.0 Produce digital media/multimedia projects.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Media/Multimedia Web Production
CIP Number: 0650010208
Program Length: 15 credit hours

This certificate program is part of the Digital Media/Multimedia Technology AS degree program (1611080103). At the completion of this program, the student will be able to:

01.0 Create, alter and/or adjust presentations utilizing a variety of digital media/multimedia technologies. The student will be able to:

01.01 Analyze the strengths and weaknesses of presentational media.

01.02 Demonstrate the ability to locate appropriate production resources.

02.0 Design and generate video and/or animations in multimedia project(s). The student will be able to:

02.01 Capture, manipulate and apply a video and/or animation image in digital media/multimedia projects.

02.02 Differentiate and optimize video and/or animation formats.

03.0 Utilize/create/produce audio technology for digital media/multimedia project(s). The student will be able to:

03.01 Capture, manipulate and apply audio and sound in digital media/multimedia projects.

03.02 Differentiate and optimize formats for audio.

04.0 Use computer applications for digital media/multimedia projects. The student will be able to:

04.01 Design and produce digital media/multimedia content.

04.02 Test, edit and de-bug digital media/multimedia content.

05.0 Produce digital media/multimedia projects. The student will be able to:

05.01 Assess the needs of the end user or client.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Webcast Media
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0650010215
Program Type	College Credit Certificate (CCC)
Program Length	12 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment as webcast production assistants or to provide supplemental training for persons previously or currently employed in these occupations.

This certificate program is part of the Digital Television and Media Production AS degree program (1609070213).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

The content includes, but is not limited to, television, broadcast, video, design and Internet media training. This program focuses on broad transferable skills and stresses understanding and demonstration of the following elements of the television video and Internet/webcast industries: working as part of a team, safe and efficient work practices, use of lighting equipment, organization and editing of video resources, and design and generation of graphic elements.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate the ability to collaborate with others.
- 02.0 Demonstrate safe and efficient work practices.
- 03.0 Create appropriate lighting for location and/or set productions.
- 04.0 Operate studio and field video cameras.
- 05.0 Record, mix and edit audio resources.
- 06.0 Organize and edit video resources.
- 07.0 Design and generate graphic elements.

**Florida Department of Education
Student Performance Standards**

Program Title: Webcast Media
CIP Number: 0650010215
Program Length: 12 credit hours

This certificate program is part of the Digital Television and Media Production AS degree program (1609070213). At the completion of this program, the student will be able to:

01.0 Demonstrate the ability to collaborate with others. The student will be able to:

01.01 Demonstrate the ability to work as part of a team.

02.0 Demonstrate safe and efficient work practices. The student will be able to:

02.01 Follow industry safety rules, regulations and policies.

02.02 Demonstrate awareness of appropriate ergonomics.

02.03 Demonstrate the proper care and use of equipment.

03.0 Create appropriate lighting for location and/or set productions. The student will be able to:

03.01 Determine appropriate lighting needs for production settings.

03.02 Use lighting equipment according to industry safety standards.

04.0 Operate studio and field video cameras. The student will be able to:

04.01 Plan a shot to obtain the required action/footage.

04.02 Demonstrate appropriate shot sequences, transitions and post-production (editing) effects.

04.03 Perform appropriate pre-production checks of equipment function.

04.04 Define the various recording formats and media.

04.05 Define appropriate digital compression and signal (file) types.

05.0 Record, mix and edit audio resources. The student will be able to:

05.01 Set up audio recording equipment.

05.02 Establish appropriate recording conditions.

05.03	Perform appropriate pre-production checks of production equipment.
06.0	Organize and edit video resources. The student will be able to:
06.01	Log and organize video resources.
06.02	Digitize video resources into post-production equipment and workflow.
07.0	Design and generate graphic elements. The student will be able to:
07.01	Operate graphic production software.
07.02	Produce broadcast graphic elements for titling, credits and graphic transitions.
07.03	Demonstrate an understanding of graphic image types and files.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Webcast Technology
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0650010218
Program Type	College Credit Certificate (CCC)
Program Length	24 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment as webcast production assistants or to provide supplemental training for persons previously or currently employed in these occupations.

This certificate program is part of the Digital Television and Media Production AS degree program (1609070213).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

The content includes, but is not limited to, television, broadcast, video, design and Internet media training. This program focuses on broad transferable skills and stresses understanding and demonstration of the following elements of the television video and Internet/webcast industries: working as part of a team, safe and efficient work practices, use of lighting equipment, operation of video camera, set up and operation of audio recording equipment, design and generation of graphic elements, organization and editing of video resources, and planning, coordination and management of a video or webcast production.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate the ability to collaborate with others.
- 02.0 Demonstrate safe and efficient work practices.
- 03.0 Generate a production schedule.
- 04.0 Plan a production set.
- 05.0 Create appropriate lighting for location and/or set productions.
- 06.0 Operate studio and field video cameras.
- 07.0 Record, mix and edit audio resources.
- 08.0 Operate control room equipment.
- 09.0 Organize and edit video resources.
- 10.0 Design and generate graphic elements.
- 11.0 Plan, coordinate and manage TV or video-based production.

**Florida Department of Education
Student Performance Standards**

Program Title: Webcast Technology
CIP Number: 0650010218
Program Length: 24 credit hours

This certificate program is part of the Digital Television and Media Production AS degree program (1609070213). At the completion of this program, the student will be able to:

01.0 Demonstrate the ability to collaborate with others. The student will be able to:

01.01 Demonstrate management and leadership abilities.

01.02 Demonstrate the ability to work as part of a team.

02.0 Demonstrate safe and efficient work practices. The student will be able to:

02.01 Follow industry safety rules, regulations and policies.

02.02 Demonstrate awareness of appropriate ergonomics.

02.03 Demonstrate the proper care and use of equipment.

03.0 Generate a production schedule. The student will be able to:

03.01 Define the segment or program type.

04.0 Plan a production set. The student will be able to:

04.01 Define set requirements for specific program type.

05.0 Create appropriate lighting for location and/or set productions. The student will be able to:

05.01 Determine appropriate lighting needs for production settings.

05.02 Identify locations and studio lighting types, methods of use and application.

05.03 Use lighting equipment according to industry safety standards.

06.0 Operate studio and field video cameras. The student will be able to:

06.01 Use current industry standard video production equipment.

06.02 Operate a camera in studio and location (field) production environments.

06.03	Plan a shot to obtain the required action/footage.
06.04	Demonstrate appropriate shot sequences, transitions and post-production (editing) effects.
06.05	Control camera movement to obtain the required effects.
06.06	Control lens, focal length, aperture and exposure to obtain required effects.
06.07	Set up the camera and recording equipment sequence.
06.08	Perform appropriate pre-production checks of equipment function.
06.09	Define the various recording formats and media.
06.10	Define appropriate digital compression and signal (file) types.
07.0	Record, mix and edit audio resources. The student will be able to:
07.01	Identify and select microphones for production needs.
07.02	Determine optimal microphone placement.
07.03	Set up audio recording equipment.
07.04	Establish appropriate recording conditions.
07.05	Perform appropriate pre-production check of production equipment.
07.06	Perform sound edits and enhancements.
07.07	Record location sound.
07.08	Record studio live sound.
08.0	Operate control room equipment. The student will be able to:
08.01	Define control room functions in a production.
08.02	Use the audio console (mixer) in a production.
09.0	Organize and edit video resources. The student will be able to:
09.01	Log and organize video resources.
09.02	Operate editing hardware and software.

09.03	Digitize video resources into post-production equipment and workflow.
10.0	Design and generate graphic elements. The student will be able to:
10.01	Determine the graphic requirements for a production.
10.02	Operate graphic production software.
10.03	Produce broadcast graphic elements for titling, credits and graphic transitions.
10.04	Generate appropriate special effects for a production.
10.05	Demonstrate an understanding of graphic image types and files.
10.06	Use image-editing software.
11.0	Plan, coordinate, and manage a TV or video-based production. The student will be able to:
11.01	Define the program/segment format and market.
11.02	Develop a production schedule.
11.03	Direct final production values.
11.04	Archive and manage finished assets and originals.
11.05	Oversee broadcast/distribution to market.
11.06	Explain the techniques and procedures of web hosts, portals, television broadcast and cable networks, syndication and public broadcasters.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Stage Technology
Career Cluster: Arts, A/V Technology and Communication

CCC	
CIP Number	0650050201
Program Type	College Credit Certificate (CCC)
Program Length	17 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to provide students with the foundational skills required for initial employment in the live entertainment industry.

This certificate program is part of the Theater and Entertainment Technology AS degree program (1650050202).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content should include, but not be limited to, stagecraft, lighting, and sound production for theatrical/entertainment productions.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Construct and install scenery to the specifications required in a scene design.
- 02.0 Perform the duties of a stagehand.
- 03.0 Install and operate sound equipment for live performance.
- 04.0 Perform the duties of a stage lighting technician.
- 05.0 Demonstrate safe work practices.

**Florida Department of Education
Student Performance Standards**

Program Title: Stage Technology
CIP Number: 0650050201
Program Length: 17 credit hours

This certificate program is part of the Theater and Entertainment Technology AS degree program (1650050202). At the completion of this program, the student will be able to:

01.0 Construct and install scenery to the specifications required in a scene design. The student will be able to:

- 01.01 Use hand and power tools commonly found in scene shops.
- 01.02 Choose materials and hardware appropriate for given scenic construction tasks.
- 01.03 Construct common two-dimensional scenery.
- 01.04 Construct common three-dimensional scenery.
- 01.05 Demonstrate application techniques used in painting scenery.
- 01.06 Construct properties and mechanical special effects.
- 01.07 Demonstrate understanding of rigging equipment.
- 01.08 Assemble prefabricated staging units.

02.0 Perform the duties of a stagehand. The student will be able to:

- 02.01 Operate equipment commonly found in performance venues.
- 02.02 Problem solve backstage issues and repairs effectively and safely.
- 02.03 Perform all duties in a disciplined manner as required by the demands of performance.
- 02.04 Work within time and operating constraints during a live performance.
- 02.05 Give and receive cues.
- 02.06 Perform all necessary pre-and post- show checks.
- 02.07 Communicate through appropriate channels before, during and after a live performance.

03.0 Install and operate sound equipment for live performance. The student will be able to:

03.01	Identify sound equipment used in productions.
03.02	Configure audio system components for an audio recording or live sound reinforcement system resulting in optimal sound quality and ensuring the safety of the equipment and personnel.
03.03	Operate sound equipment in both record and playback mode.
03.04	Utilize audio hardware, software, data protocols, and computer networks.
03.05	Record and edit sound effects for live entertainment productions.
04.0	Perform the duties of a stage lighting technician. The student will be able to: The student will be able to:
04.01	Hang, circuit, and focus stage lights to the specifications required in a lighting design.
04.02	Prepare and read standard lighting documentation.
04.03	Identify stage lighting equipment.
04.04	Set control parameters and run data cables for intelligent lighting fixtures.
04.05	Perform the duties of a light board operator.
04.06	Program cues on a computerized lighting console.
05.0	Demonstrate safe work practices. The student will be able to:
05.01	Identify, understand and abide by safety rules for live production equipment and workspaces.
05.02	Identify health and environmental hazards of materials used in live show production.
05.03	Select and use the appropriate protective personal protective clothing and equipment when working in a shop or stage environment.
05.04	Use shop, lighting, sound, and stage equipment in accordance with both manufacturer and industry safety standards.
05.05	Identify and correct unsafe work practices.
05.06	Demonstrate understanding of electrical safety.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Video Editing and Post Production
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0650060200
Program Type	College Credit Certificate (CCC)
Program Length	24 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment as video production technicians or to provide supplemental training for persons previously or currently employed in these occupations. The content includes, but is not limited to television, broadcast, video, design and Internet media training. This program focuses on broad transferable skills and stresses understanding and demonstration of the following elements of the television video and Internet/webcast industries: working as part of a team, safe and efficient work practices, use of editing equipment, use of lighting equipment, operation of video camera, set up and operation of audio recording equipment, design and generation of graphic elements and organization and editing of video resources.

This certificate program is part of the Digital Television and Media Production AS degree program (1609070213).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate the ability to collaborate with others.
- 02.0 Demonstrate safe and efficient work practices.
- 03.0 Generate a production schedule.
- 04.0 Plan a production set.
- 05.0 Create appropriate lighting for location and/or set productions.
- 06.0 Operate studio and field video cameras.
- 07.0 Record, mix and edit audio resources.
- 08.0 Organize and edit video resources.
- 09.0 Design and generate graphic elements.

**Florida Department of Education
Student Performance Standards**

Program Title: Video Editing and Post-Production
CIP Number: 0650060200
Program Length: 24 credit hours

This certificate program is part of the Digital Television and Media Production AS degree program (1609070213). At the completion of this program, the student will be able to:

01.0 Demonstrate the ability to collaborate with others. The student will be able to:

01.01 Demonstrate the ability to work as part of a team.

02.0 Demonstrate safe and efficient work practices. The student will be able to:

02.01 Follow industry safety rules, regulations and policies.

02.02 Demonstrate awareness of appropriate ergonomics.

02.03 Demonstrate the proper care and use of equipment.

03.0 Generate a production schedule. The student will be able to:

03.01 Define the segment or program type.

04.0 Plan a production set. The student will be able to:

04.01 Define the set requirements for a specific program type.

05.0 Create appropriate lighting for location and/or set productions. The student will be able to:

05.01 Determine appropriate lighting needs for production settings.

05.02 Identify locations and studio lighting types, methods of use and application.

05.03 Use lighting equipment according to industry safety standards.

05.04 Define light quality in terms of intensity, color, direction and characteristics.

05.05 Light a location set with ambient/available and supplemental lighting.

06.0 Operate studio and field video cameras. The student will be able to:

06.01 Use current industry standard video production equipment.

06.02	Operate a camera in studio and location (field) production environments.
06.03	Plan a shot to obtain the required action/footage.
06.04	Demonstrate appropriate shot sequences, transitions and post-production (editing) effects.
06.05	Control camera movement to obtain the required effects.
06.06	Control lens, focal length, aperture and exposure to obtain required effects.
06.07	Set up the camera and recording equipment sequence.
06.08	Perform appropriate pre-production checks of equipment function.
06.09	Perform basic routine, preventative and repair maintenance on video equipment.
06.10	Define the various recording formats and media.
07.0	Record, mix and edit audio resources. The student will be able to:
07.01	Identify and select microphones for production needs.
07.02	Determine optimal microphone placement.
07.03	Set up audio recording equipment.
07.04	Establish appropriate recording conditions.
07.05	Perform appropriate pre-production checks of production equipment.
07.06	Perform sound edits and enhancements.
07.07	Record location sound.
08.0	Organize and edit video resources. The student will be able to:
08.01	Log and organize video resources.
08.02	Operate editing hardware and software.
08.03	Digitize video resources into post-production equipment and workflow.
08.04	Edit video, graphic elements, and audio.
08.05	Maintain continuity and production values.

08.06	Apply color correction to video footage.
09.0	Design and generate graphic elements. The student will be able to:
09.01	Determine the graphic requirements for a production.
09.02	Operate graphic production software.
09.03	Produce broadcast graphic elements for titling, credits and graphic transitions.
09.04	Set up and operate character generator equipment and software.
09.05	Generate appropriate special effects for a production.
09.06	Demonstrate an understanding of graphic image types and files.
09.07	Use image-editing software.
09.08	Demonstrate an ability to use type, color, composition and graphic elements for a specific production effect.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Film Production Fundamentals
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0650060203
Program Type	College Credit Certificate (CCC)
Program Length	24 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as an assistant camera operator, set decorator, prop master, assistant editor, boom operator, audio utility, electrician and grip, or to provide supplemental training for persons previously or currently employed in these occupations. The content should include, but not be limited to, instruction that prepares students to function as part of a team on film/video productions.

This certificate program is part of the Film Production Technology AS degree program (1650060213).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate storytelling ability through filmmaking.
- 02.0 Demonstrate the application of film aesthetics in film productions.
- 03.0 Function as part of a team on film productions.
- 04.0 Analyze and execute the operation of the standard equipment, including camera, sound, lighting, and grip in a production.
- 05.0 Analyze and execute tasks in post-production.
- 06.0 Demonstrate employability skills.

**Florida Department of Education
Student Performance Standards**

Program Title: Film Production Fundamentals
CIP Number: 0650060203
Program Length: 24 credits hours

This certificate program is part of the Film Production Technology AS degree program (1650060213). At the completion of this program, the student will be able to:

01.0	Demonstrate storytelling ability through filmmaking. The student will be able to:
01.01	Apply film language in the development of supporting documents.
01.02	Develop supporting documents from a script.
01.03	Create films demonstrating film language and storytelling skills.
02.0	Demonstrate the application of film aesthetics in film productions. The student will be able to:
02.01	Demonstrate an understanding of film history and aesthetics in the development and execution of a film production.
02.02	Demonstrate an understanding of visual communication in the execution of a film production.
02.03	Create shot lists, storyboards, and other pre-production documents that demonstrate the creative use of film aesthetics and visual communication.
02.04	Demonstrate knowledge of camera blocking and screen direction.
02.05	Demonstrate knowledge of production design and the hierarchy of the art department.
03.0	Function as part of a team on film productions. The student will be able to:
03.01	Differentiate the working relationships that exist between the various participants involved in the film making process.
03.02	Perform as a member of a technical team within the framework of an organized film production.
03.03	Adapt learned skills and generate original approaches to work as a team to solve unique production problems.
03.04	Demonstrate collaboration and leadership as a member of a film production team.
04.0	Analyze and execute the operation of the standard equipment, including camera, sound, lighting, and grip in a production. The student will be able to:
Camera	

04.01	Organize the proper care, set up, and handling of camera and camera support equipment.
04.02	Demonstrate knowledge of the technical operation and set up of a camera for cinematography.
04.03	Analyze the aesthetic needs of a shot and accomplish them by using standard industry camera equipment.
04.04	Analyze the script for camera lens and shot requirements.
04.05	Demonstrate understanding of different responsibilities within the camera department.
04.06	Analyze production requirements to determine camera equipment needs.
Sound	
04.07	Organize the proper care, set up, technical operation and handling of sound recording equipment.
04.08	Analyze the aesthetic needs of a film and accomplish them by using standard industry sound recording equipment.
04.09	Demonstrate understanding of different responsibilities within the sound recording department.
Lighting	
04.10	Organize the proper care, set up, technical operation and handling of film lighting equipment.
04.11	Analyze the aesthetic needs of a film and accomplish them by using standard industry lighting equipment.
04.12	Demonstrate understanding of different responsibilities within the lighting department.
Grip	
04.13	Organize the proper care, set up, technical operation and handling of grip equipment.
04.14	Demonstrate understanding of different responsibilities within the grip department.
05.0	Analyze and execute the tasks of the production department on films. The student will be able to:
05.01	Manage resources and personnel to meet production deadlines.
05.02	Interpret a film script to develop supporting pre-production and production documents for their production requirements.
05.03	Adapt learned skills and generate original approaches to solve unique production problems.
06.0	Analyze and execute tasks in post-production. The student will be able to:
06.01	Demonstrate storytelling skills in the post-production of short films.

06.02	Execute the editing of short films.
07.0	Demonstrate employability skills. The student will be able to:
07.01	Formulate strategy for post-graduation.
07.02	Demonstrate competence in job interview techniques.
07.03	Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.
07.04	Identify acceptable work habits.
07.05	Demonstrate knowledge of how to navigate the job market for growth in the industry.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Motion Picture Production
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0650060204
Program Type	College Credit Certificate (CCC)
Program Length	16 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as a production assistant, lighting assistant, gripping assistant, audio assistant, camera assistant, or to provide supplemental training for persons previously or currently employed in these occupations. The content should include, but not be limited to, instruction that prepares individuals to function as members of a technical team within the framework of an organized film/video production. Instruction includes: scenery design, audio recording and playback, stage lighting, gripping, camera, and lighting.

This certificate program is part of the Film Production Technology AS degree program (1650060213).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate storytelling ability through filmmaking.
- 02.0 Demonstrate the application of film aesthetics in film productions.
- 03.0 Function as part of a team on film productions.
- 04.0 Analyze and execute the operation of the standard equipment, including camera, sound, lighting, and grip in a production.
- 05.0 Analyze and execute the tasks of the production department on films.
- 06.0 Analyze and execute tasks in post-production.
- 07.0 Demonstrate employability skills.
- 08.0 Demonstrate an understanding of entrepreneurship.

**Florida Department of Education
Student Performance Standards**

Program Title: Motion Picture Production
CIP Number: 0650060204
Program Length: 16 credit hours

This certificate program is part of the Film Production Technology AS degree program (1650060213). At the completion of this program, the student will be able to:

01.0 Demonstrate storytelling ability through filmmaking. The student will be able to:

01.01 Apply film language in the development of supporting documents.

02.0 Demonstrate the application of film aesthetics in film productions. The student will be able to:

02.01 Demonstrate knowledge of production design and the hierarchy of the art department.

03.0 Function as part of a team on film productions. The student will be able to:

03.01 Differentiate the working relationships that exist between the various participants involved in the film making process.

03.02 Perform as a member of a technical team within the framework of an organized film production.

03.03 Adapt learned skills and generate original approaches to work as a team to solve unique production problems.

03.04 Demonstrate collaboration and leadership as a member of a film production team.

04.0 Analyze and execute the operation of the standard equipment, including camera, sound, lighting, and grip in a production. The student will be able to:

Camera

04.01 Demonstrate understanding of different responsibilities within the camera department.

Sound

04.02 Demonstrate understanding of different responsibilities within the sound recording department.

Lighting

04.03 Demonstrate understanding of different responsibilities within the lighting department.

Grip

04.04	Demonstrate understanding of different responsibilities within the grip department.
05.0	Analyze and execute the tasks of the production department on films. The student will be able to:
05.01	Execute the production management of films using appropriate hierarchy.
05.02	Manage resources and personnel to meet production deadlines.
05.03	Interpret a film script to develop supporting pre-production and production documents for their production requirements.
05.04	Adapt learned skills and generate original approaches to solve unique production problems.
05.05	Demonstrate the skills required from a production department in various production settings.
06.0	Analyze and execute tasks in post-production. The student will be able to:
06.01	Demonstrate organization of post-production resources and understand post-production workflow.
07.0	Demonstrate employability skills. The student will be able to:
07.01	Formulate strategy for post-graduation.
07.02	Demonstrate competence in job interview techniques.
07.03	Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.
07.04	Identify acceptable work habits.
07.05	Demonstrate knowledge of how to navigate the job market for growth in the industry.
08.0	Demonstrate an understanding of entrepreneurship. The student will be able to:
08.01	Describe the importance of entrepreneurship to the film and television industry.
08.02	List the advantages and disadvantages of business ownership.
08.03	Identify the necessary personal characteristics of a successful entrepreneur.
08.04	Identify the business skills needed to operate a small business efficiently and effectively.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Motion Picture Post-Production
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0650060205
Program Type	College Credit Certificate (CCC)
Program Length	16 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as a post-production assistant or to provide supplemental training for persons previously or currently employed in these occupations. The content should include, but not be limited to, instruction that prepares individuals to function as members of a technical team within the framework of an organized film/video production. Instruction includes: synchronization of dailies, interpreting and implementing the audio requirements for film production and employability skills.

This certificate program is part of the Film Production Technology AS degree program (1650060213).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate storytelling ability through filmmaking.
- 02.0 Demonstrate the application of film aesthetics in film productions.
- 03.0 Function as part of a team on film productions.
- 04.0 Analyze and execute the operation of the standard equipment, including camera, sound, lighting, and grip in a production.
- 05.0 Analyze and execute tasks in post-production.
- 06.0 Demonstrate employability skills.

**Florida Department of Education
Student Performance Standards**

Program Title: Motion Picture Post Production
CIP Number: 0650060205
Program Length: 16 credit hours

This certificate program is part of the Film Production Technology AS degree program (1650060213). At the completion of this program, the student will be able to:

01.0	Demonstrate storytelling ability through filmmaking. The student will be able to:
01.01	Apply film language in the development of supporting documents.
01.01	Create films demonstrating film language and storytelling skills.
02.0	Demonstrate the application of film aesthetics in film productions. The student will be able to:
02.01	Demonstrate an understanding of film history and aesthetics in the development and execution of a film production.
02.02	Demonstrate an understanding of visual communication in the execution of a film production.
03.0	Function as part of a team on film productions. The student will be able to:
03.01	Perform as a member of a technical team within the framework of an organized film production.
03.02	Adapt learned skills and generate original approaches to work as a team to solve unique production problems.
04.0	Analyze and execute the operation of the standard equipment, including camera, sound, lighting, and grip in a production. The student will be able to:
Sound	
04.01	Analyze the aesthetic needs of a film and accomplish them by using standard industry sound recording equipment.
04.02	Analyze the script for sound recording and post-production requirements.
04.03	Demonstrate execution of sound recording for production and post-production.
05.0	Analyze and execute tasks in post-production. The student will be able to:
05.01	Demonstrate storytelling skills in the post-production of short films.
05.02	Execute the editing of short films.

05.03	Execute the sound design of short films.
05.04	Execute the color grading of short films.
05.05	Execute the development, creation, and application of graphics and visual effects for films.
05.06	Demonstrate organization of post-production resources and understand post-production workflow.
05.07	Demonstrate application of industry standard approaches to film post-production.
06.0	Demonstrate employability skills. The student will be able to:
06.01	Formulate strategy for post-graduation.
06.02	Demonstrate competence in job interview techniques.
06.03	Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.
06.04	Identify acceptable work habits.
06.05	Demonstrate knowledge of how to navigate the job market for growth in the industry.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Motion Picture Production Management
Career Cluster: Arts A/V Technology and Communication

CCC	
CIP Number	0650060206
Program Type	College Credit Certificate (CCC)
Program Length	16 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment as a producer's assistant, production assistant, production manager, or to provide supplemental training for persons previously or currently employed in these occupations.

The content should include, but not be limited to, instruction that prepares individuals to function as members of a technical team within the framework of an organized film/video production. Instruction includes the analysis and implementation of tasks for gripping, camera, lighting, and film/video editing.

This certificate program is part of the Film Production Technology AS degree program (1650060213).

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate storytelling ability through filmmaking.
- 02.0 Demonstrate the application of film aesthetics in film productions.
- 03.0 Function as part of a team on film productions.
- 04.0 Analyze and execute the operation of the standard equipment, including camera, sound, lighting, and grip in a production.
- 05.0 Analyze and execute the tasks of the production department on films.
- 06.0 Analyze and execute tasks in post-production.
- 07.0 Demonstrate employability skills.

**Florida Department of Education
Student Performance Standards**

Program Title: Motion Picture Production Management
CIP Number: 0650060206
Program Length: 16 credit hours

This certificate program is part of the Film Production Technology AS degree program (1650060213). At the completion of this program, the student will be able to:

01.0	Demonstrate storytelling ability through filmmaking. The student will be able to:
01.01	Apply film language in the development of supporting documents.
01.02	Develop supporting documents from a script.
01.03	Create films demonstrating film language and storytelling skills.
02.0	Demonstrate the application of film aesthetics in film productions. The student will be able to:
02.01	Create shot lists, storyboards, and other pre-production documents that demonstrate the creative use of film aesthetics and visual communication.
02.02	Demonstrate knowledge of camera blocking and screen direction.
03.0	Function as part of a team on film productions. The student will be able to:
03.01	Differentiate the working relationships that exist between the various participants involved in the film making process.
03.02	Perform as a member of a technical team within the framework of an organized film production.
03.03	Adapt learned skills and generate original approaches to work as a team to solve unique production problems.
03.04	Demonstrate collaboration and leadership as a member of a film production team.
04.0	Analyze and execute the operation of the standard equipment, including camera, sound, lighting, and grip in a production. The student will be able to:
Camera	
04.01	Organize the proper care, set up, and handling of camera and camera support equipment.
04.02	Demonstrate knowledge of the technical operation and set up of a camera for cinematography.
04.03	Analyze the aesthetic needs of a shot and accomplish them by using standard industry camera equipment.

04.04	Analyze the script for camera lens and shot requirements.
04.05	Demonstrate understanding of different responsibilities within the camera department.
04.06	Analyze production requirements to determine camera equipment needs.
Sound	
04.07	Organize the proper care, set up, technical operation and handling of sound recording equipment.
04.08	Analyze the aesthetic needs of a film and accomplish them by using standard industry sound recording equipment.
04.09	Analyze the script for sound recording and post-production requirements.
04.10	Demonstrate understanding of different responsibilities within the sound recording department.
04.11	Analyze production requirements to determine sound equipment needs.
04.12	Demonstrate execution of sound recording for production and post-production.
Lighting	
04.13	Organize the proper care, set up, technical operation and handling of film lighting equipment.
04.14	Analyze the aesthetic needs of a film and accomplish them by using standard industry lighting equipment.
04.15	Analyze the script for lighting requirements.
04.16	Demonstrate understanding of different responsibilities within the lighting department.
Grip	
04.17	Organize the proper care, set up, technical operation and handling of grip equipment.
04.18	Analyze the aesthetic needs of a film and accomplish them by using standard industry grip equipment.
04.19	Analyze the script for grip equipment requirements.
04.20	Demonstrate understanding of different responsibilities within the grip department.
04.21	Analyze production requirements to determine grip equipment needs.
05.0	Analyze and execute the tasks of the production department on films. The student will be able to:
05.01	Manage resources and personnel to meet production deadlines.

05.02	Adapt learned skills and generate original approaches to solve unique production problems.
06.0	Analyze and execute tasks in post-production. The student will be able to:
06.01	Execute the editing of short films.
06.02	Demonstrate organization of post-production resources and understand post-production workflow.
07.0	Demonstrate employability skills. The student will be able to:
07.01	Formulate strategy for post-graduation.
07.02	Demonstrate competence in job interview techniques.
07.03	Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.
07.04	Identify acceptable work habits.
07.05	Demonstrate knowledge of how to navigate the job market for growth in the industry.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Photography
Career Cluster: Arts, A/V Technology and Communication

CCC	
CIP Number	0650060501
Program Type	College Credit Certificate (CCC)
Program Length	22 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment as a photographer or to provide supplemental training for persons previously or currently employed in these occupations.

This certificate program is part of the Photographic Technology AS degree program (1650060500).

The content includes, but is not limited to, communication skills, leadership skills, human relations and employability skills, safe and efficient work practices, use of digital cameras, image editing software, inkjet photographic papers, computer editing practices, photographic equipment, and technical recording and reporting. This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the Photography industry: planning, management, finance, technical and product skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.).

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the photograph production skills, in theory or practice.
- 02.0 Demonstrate understanding of exposure control.
- 03.0 Make basic photographs.
- 04.0 Demonstrate knowledge of various format cameras.
- 05.0 Demonstrate mastery of archiving and presenting finished photographs.
- 06.0 Apply lighting techniques.
- 07.0 Make commercial photographs on location and in studio.
- 08.0 Produce media presentations.
- 09.0 Demonstrate an understanding of the aesthetics of photographs.
- 10.0 Demonstrate competencies required to manage a photographic business.

**Florida Department of Education
Student Performance Standards**

Program Title: Photography
CIP Number: 0650060501
Program Length: 22 credit hours

This certificate program is part of the Photographic Technology AS degree program (1650060500). At the completion of this program, the student will be able to:

01.0 Demonstrate knowledge of the photograph production skills, in theory or practice. The student will be able to:

01.01 Understand photographic chemistry.

01.02 Apply camera care and maintenance principles.

01.03 Understand hand-process black and white as well as color film.

01.04 Print black and white as well as color photographs.

01.05 Produce black and white as well as color print using automated device(s).

01.06 Apply post-production techniques using industry-standard software.

02.0 Demonstrate understanding of exposure control. The student will be able to:

02.01 Explain characteristics of various F-stops and shutter speeds.

02.02 Explain appropriate ISO.

02.03 Understand file formats.

03.0 Make basic photographs. The student will be able to:

03.01 Use design principles.

03.02 Make photographs of still and moving subjects.

03.03 Understand various workflows.

04.0 Demonstrate knowledge of various format cameras. The student will be able to:

04.01 Understand medium format up to large format cameras.

05.0 Demonstrate mastery of archiving and presenting finished photographs. The student will be able to:

05.01	Mount photographs.
05.02	Mat/frame photographs.
05.03	Demonstrate the use of file management, metadata and keywords.
06.0	Apply lighting techniques. The student will be able to:
06.01	Understand contrast range in lighting.
06.02	Make photographs with electronic strobe.
06.03	Make photographs with a continuous light source.
07.0	Make commercial photographs on location and in studio. The student will be able to:
07.01	Make portraits.
07.02	Make product photographs.
08.0	Produce media presentations. The student will be able to:
08.01	Prepare storyboard.
08.02	Prepare script.
08.03	Create digital files, both still and video.
08.04	Record high quality audio.
08.05	Edit video using industry-standard software.
08.06	Produce finish product.
09.0	Demonstrate an understanding of the aesthetics of photographs. The student will be able to:
09.01	Critique both the form and content of photographs in a classroom setting.
09.02	Demonstrate appropriate responses to criticism in an academic setting.
10.0	Demonstrate competencies required to manage a photographic business. The student will be able to:
10.01	Apply communication skills.
10.02	Apply human relations skills.

10.03 Set rates for photographic work.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Fashion Design
Career Cluster: Arts, A/V Technology & Communication

AS	
CIP Number	1450040700
Program Type	College Credit
Program Length	60 credit hours
CTSO	FCCLA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology & Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology & Communication career cluster.

The content includes but is not limited to the following aspects of the fashion design industry: planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues, and health, safety, and environmental issues.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 60 credit hours.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate appropriate basic skills essential to working in design occupations.
- 02.0 Describe the relationship between human factors and design services.
- 03.0 Identify the characteristics and care of textiles.
- 04.0 Select and safely use tools and equipment.
- 05.0 Operate and maintain a conventional and/or commercial/industrial sewing machine.
- 06.0 Select and prepare materials.
- 07.0 Develop a design portfolio.
- 08.0 Demonstrate an understanding of the elements and principles of design.
- 09.0 Demonstrate an understanding of the terminology used in the apparel industry.
- 10.0 Demonstrate skill in the construction of simple garments.
- 11.0 Demonstrate an understanding of the ways eco-fashion decisions impact the environment, consumer health and the working conditions of people in the fashion industry.
- 12.0 Demonstrate an understanding of the uses of technology in the fashion industry.
- 13.0 Create an original pattern for a garment.
- 14.0 Identify and describe the different specialties related to Fashion Technology and Design Services (e.g., Window Display, Fashion Design Assistant, Tailor's Assistant, Personal Shopper, and Stylist).
- 15.0 Finalize a professional portfolio according to industry standards.

**Florida Department of Education
Student Performance Standards**

Program Title: Fashion Design
CIP Number: 1450040700
Program Length: 60 credit hours

At the completion of this program, the student will be able to:

01.0 Demonstrate leadership and organizational skills. The student will be able to:

01.01 Demonstrate cooperation as a group member to achieve organizational goals.

01.02 Demonstrate confidence in leadership roles and organizational responsibilities.

02.0 Demonstrate appropriate basic skills essential to working in design services occupations. The student will be able to:

02.01 Identify the knowledge, skills, and attitudes necessary to perform occupational tasks (e.g., email, phone, conversations with clients).

02.02 Demonstrate the communication competencies required to perform occupational tasks.

03.0 Identify the characteristics and care of textiles. The student will be able to:

03.01 Identify and describe fiber characteristics.

03.02 Identify and describe types of fabric construction (e.g., knitted, woven, tufted).

03.03 Identify and describe types of fabric finishes (e.g., dyed, printed, performance/quality enhancements).

03.04 Identify and describe different types of natural and manufactured textiles; identify the pros/cons, uses, and care of each type.

03.05 Identify the laws and regulations governing the textile industry; include labeling laws and care symbols.

04.0 Select and safely use tools and equipment. The student will be able to:

04.01 Identify the tools and equipment used in design services for sewing, cutting, measuring, fabric marking, and drafting.

04.02 Select the appropriate tools and equipment for assigned projects; explain why the selection is appropriate for the project.

04.03 Demonstrate proper and safe usage of tools and equipment.

04.04 Identify and demonstrate safety procedures for the use of conventional sewing machines and home sergers, and pressing equipment.

04.05 Explain the importance of observing Occupational Safety and Health Administration (OSHA) rules and regulations.

04.06	Clean and maintain various types of tools and equipment.
04.07	Keep an inventory record of tools, equipment, supplies, and materials using computer application software or other formatting options (e.g., written records).
04.08	Research innovations in materials and technologies that contribute to safeguards in the tools and equipment used in fashion design services.
04.09	Identify and apply drafting tools and techniques to a specific design services project (e.g., architectural ruler, light box, protractor, floor plans to scale, one-point perspective).
05.0	Operate and maintain a conventional and/or commercial/industrial sewing machine. The student will be able to:
05.01	Identify the parts of a sewing machine.
05.02	Select the needles that appropriate for different fabric types; identify the process and demonstrate needle insertion.
05.03	Identify the steps and demonstrate threading a sewing machine.
05.04	Diagram and demonstrate the ability to wind the bobbin, thread the bobbin case, and insert the bobbin correctly into a sewing machine.
05.05	Demonstrate straight stitching.
05.06	Identify and demonstrate stitch length and width selection.
05.07	Demonstrate utility and decorative stitches.
05.08	Identify the tension and demonstrate tension adjustment.
05.09	Demonstrate cleaning and lubricating the machine following manufacturer's instructions.
06.0	Select and prepare materials. The student will be able to:
06.01	Identify and match pattern pieces.
06.02	Read and interpret instructions and specifications.
06.03	Identify fabric content.
06.04	Prepare fabric.
06.05	Adjust patterns according to pattern/teacher instructions.
06.06	Lay out, pin, cut, and mark fabric according to a pattern or teacher instructions.
06.07	Demonstrate stay stitching and ease stitching.

06.08	Match grain lines and patterns according to a pattern or teacher instructions.
06.09	Mark fabric for assembly according to a pattern or teacher instructions.
06.10	Mark fabric for trims according to a pattern or teacher instructions.
06.11	Match thread with fabric.
06.12	Identify, select, and use content labels according to fabric requirements.
07.0	Develop a design portfolio. The student will be able to:
07.01	Assemble a portfolio; include all work samples.
07.02	Assemble a Technical Sewing Samples binder.
07.03	Construct basic hand-stitching techniques (e.g., running, backstitch, overcast, blanket).
07.04	Demonstrate stay stitching and ease stitching.
07.05	Demonstrate straight seams, clean finish and other seam finishes; include common seam allowances (e.g., 1/4", 5/8").
07.06	Demonstrate hemming techniques (e.g., slip stitch, blind hem stitch).
08.0	Demonstrate an understanding of the elements and principles of design. The student will be able to:
08.01	Identify and explain the elements of design (e.g., texture, pattern, line, form, shape, space, color, and light) and how various effects can be achieved.
08.02	Identify and explain the principles of design and how they can be used (e.g., proportion, scale, balance, rhythm, emphasis, and harmony).
08.03	Apply the elements and principles of design to Fashion Technology and Design Services.
08.04	Develop a project applying color and color schemes in a design.
08.05	Use the laws of design to evaluate a design project.
08.06	Create an elements and principles section for a design portfolio.
09.0	Demonstrate an understanding of the terminology used in the apparel industry. The student will be able to:
09.01	Complete a research project dealing with aspects of fashion retail and production; include terminology, labeling, designers, manufacturers and stores used within the apparel industry.
10.0	Demonstrate skill in the construction of simple garments. The student will be able to:

10.01	Identify common ready-to-wear sizes
10.02	Identify and describe the characteristics of a properly fitted garment.
10.03	Take accurate body measurements, select pattern size, and determine figure type.
10.04	Interpret verbal, written, and visual directions.
10.05	Prepare fabric and adjust patterns by following pattern directions.
10.06	Lay out, pin, cut, and mark fabric according to pattern specifications.
10.07	Demonstrate stay stitching and ease stitching.
10.08	Demonstrate stitching darts and tucks.
10.09	Identify and match garment pieces using markings; stitch according to directions.
10.10	Match plaids, stripes and one-way designs.
10.11	Demonstrate correct pressing techniques according to fabric requirements.
10.12	Demonstrate casing and elastic installation.
10.13	Demonstrate machine hemming according to machine manual instructions.
10.14	Identify different types of sergers and their characteristics.
11.0	Demonstrate an understanding of the importance of how eco-fashion decisions impact the environment, consumer health and the working conditions of people in the fashion industry. The student will be able to:
11.01	Demonstrate an understanding of eco-fashion.
11.02	Identify materials that can be used to make eco-friendly fashions and accessories; describe why these materials are eco-friendly.
11.03	Research innovations in materials and technologies that have contributed to safeguards in the tools and equipment used in fashion technology and design services.
11.04	Compare the working conditions of employees when materials are produced following eco-friendly guidelines and when they are not.
11.05	Research methods for using vegetable and plant materials for eco-friendly fashions and replacing these materials into the environment.
11.06	Describe ways to be eco-friendly and the environmental and social responsibilities of eco-friendly methods.
11.07	Design and create an eco-friendly fashion product.

12.0	Demonstrate an understanding of the uses of technology in the fashion industry. The student will be able to:
12.01	Research and list software options available for fashion design services.
12.02	Demonstrate an understanding of how contemporary technologies (CAD, electronic sewing, knitting, embroidery machines, and sergers) are used in the creation of fashion products (e.g., fashion profiles, fabrics, and garments).
12.03	Analyze how specific technologies are used in the fashion design industry.
12.04	Create a fashion product using two or more technologies appropriately.
12.05	Research innovations in materials and technologies that have contributed to safeguards in tools and equipment.
12.06	Identify the development of tools, equipment and technology used in fashion design services as they relate to particular historical periods.
13.0	Create an original pattern for a garment. The student will be able to:
13.01	Plan and report on a fashion design project using established criteria.
13.02	Using appropriate software, insert body measurements to produce a pattern.
13.03	Draft and produce a paper pattern using personal measurements.
13.04	Create slopers for a bodice, skirt, and pants; construct the slopers using grey goods and create a mood board that includes a title, photographs of the sloper, and the purpose/use of a sloper (include in Professional Portfolio).
13.05	Create a muslin prototype of the pattern.
13.06	Evaluate the prototype for proper fit and adjust as needed.
13.07	Construct a specialty garment according to teacher instructions (the project must include a minimum number of construction skills as designated by the teacher).
14.0	Identify and describe the different specialties related to Fashion Technology and Design Services (e.g., Window Display, Fashion Design Assistant, Tailor's Assistant, Personal Shopper, and Stylist). The student will be able to:
14.01	Identify future trends in Fashion Technology and Design Services.
14.02	Research, identify, and describe the different job responsibilities of a Window Displayer, Fashion Design Assistant, Tailor's Assistant, Personal Shopper, and Stylist.
14.03	Identify, research, and describe current trends related to careers in the Fashion Technology and Design Services industry (e.g., blogger, museum curator, entertainment).
15.0	Finalize a professional portfolio according to industry standards. The student will be able to:
15.01	Submit a portfolio; include work samples from the Fashion Technology and Design Services program.
15.02	Compile and present a Mastery Project Showcase; include the professional portfolio, the technical sewing samples binder,

examples of coursework, evidence of awards/honors, evidence of participation in FCCLA (if applicable), samples of constructed garments and slopers, and the use of technology.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

General Education Course Requirements for AS and AAS Degrees

State Board of Education Rule 6A-14.030(4), F.A.C., identifies 15 credit hours as the minimum amount of general education coursework required in the Associate of Science (AS) degree and the Associate of Applied Science (AAS) degree. In addition, Rule 6A-14.0303, F.A.C., implements s. 1007.25, F.S., and requires students entering a technical education degree program in the 2022-2023 academic year, and thereafter, to complete at least one identified core course in each subject area as part of the general education course requirements (15 credit hours total) before a degree is awarded) The core subject areas include:

- Communication.
- Humanities.
- Mathematics.
- Natural Sciences.
- Social Sciences.

Career and Technical Student Organization (CTSO)

Florida Family Career and Community Leaders of America (FCCLA) is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Certificate Programs

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates (CCC):

Pattern Making and Construction (0450040702) – 21 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education
Curriculum Framework**

Program Title: Interior Design Technology
Career Cluster: Arts, A/V Technology and Communication

AS	
CIP Number	1450040801
Program Type	College Credit
Program Length	75 credit hours
CTSO	Collegiate DECA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The primary purpose of this program is to prepare students for initial employment in the interior design, architecture or construction industry leading to state licensing and registration as an interior designer. Interior designers are required by the Florida Department of Business and Professional Regulation, Board of Architecture and Interior Design to have a combination of six years of education and work experience and National Council for Interior Design Qualification (NCIDQ) Certification. Other occupations relevant to this program include careers as a kitchen designer, bath designer, color consultant, display manager, buyer, merchandise displayer, sales associate, manufacturer sales representative, drafting technician, space planner, and construction/housing specifications writer. This program may also be used to provide supplemental or required training for persons previously or currently employed in these related occupations.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 75 credit hours.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Identify and apply elements and principles of design to interior spaces.
- 02.0 Describe the interrelationship between humans and their interior environments.
- 03.0 Plan for space utilization and development according to identified functions (programming and diagramming).
- 04.0 Select and arrange furniture, fixtures, fabrics, equipment, and accessories.
- 05.0 Identify the appropriate uses and functions of materials.
- 06.0 Identify, research, and specify interior design materials and resources.
- 07.0 Research and specify appropriate interior lighting options.
- 08.0 Identify interior methods and systems in building construction.
- 09.0 Identify interior building codes, regulations, and legislation pertaining to residential and non-residential spaces.
- 10.0 Communicate design projects through graphic techniques and visual/oral presentation skills.
- 11.0 Demonstrate employability skills and identify job and career opportunities.
- 12.0 Identify professional business organization and development procedures and/or systems.
- 13.0 Recognize, identify, and/or analyze historical, cultural, and societal influences on structures, interiors, and furnishings.
- 14.0 Analyze and apply the concepts of adaptive reuse, renovation, restoration, and/or the historic preservation of existing structures.
- 15.0 Incorporate evaluation, space planning, layout, workflow, and design into a project.
- 16.0 Identify the categories (high, medium, low) involved in the calculation of a budget estimate for an interior design project.
- 17.0 Learn the process of manually and/or electronically preparing a complete set of working construction drawings for a building.
- 18.0 Identify the importance of acoustics to habitable spaces.
- 19.0 Create a Life Safety Plan.
- 20.0 Design safe and universally accessible spaces.
- 21.0 Identify the elements of a basic agreement between the designer and the client; identify services and responsibilities.
- 22.0 Demonstrate knowledge of computer skills.
- 23.0 Identify, research, and design sustainable interiors.
- 24.0 Develop and maintain a professional portfolio.
- 25.0 Participate in an internship.

**Florida Department of Education
Student Performance Standards**

Program Title: Interior Design Technology
CIP Number: 1450040801
Program Length: 75 credit hours

At the completion of this program, the student will be able to:

01.0	Identify and apply elements and principles of design to interior spaces. The student will be able to:
01.01	Evaluate aspects of color schemes in relation to interior design.
01.02	Describe the color wheel.
01.03	Explain the psychological effects of color on space and human interaction.
01.04	Demonstrate the primary elements of design (point, line, plane, volume) and the role of these elements in interior design and architecture.
01.05	Describe and demonstrate the function of the visible spectrum and pigmentation as inherent properties of design materials and their impact on color perception.
01.06	Describe and demonstrate knowledge of the three dimensions of color.
01.07	Identify common comprehensive color systems used by designers for the description and specification of color.
01.08	Apply knowledge of the results and effects of color interaction in design.
01.09	Identify and apply the categories of material and surface texture to interior needs and functions; determine how they affect the perception of color in interiors spaces.
01.10	Identify and demonstrate the role of light on perception of surface texture in design projects and how light affects the perception of color in interior spaces.
01.11	Identify, describe, and apply the principles of design and design elements to the function (use of the interior space) and aesthetics of design.
02.0	Describe the interrelationship between humans and their interior environments. The student will be able to:
02.01	Identify personal and group needs that influence the use of each occupied space, including those of persons with special needs.
02.02	Identify, describe, and apply the principles of evidence-based design.
02.03	Demonstrate an understanding of the Americans with Disabilities Act and how it affects the interior environment.
02.04	Demonstrate an understanding of specialized design needs.

02.05	Illustrate the principles of ergonomics and anthropometrics.
02.06	Identify responses to the psychological, physical, and social needs of people using interior spaces (e.g., territoriality, personalization, group interaction).
03.0	Plan for space utilization and development according to identified functions (programming and diagramming). The student will be able to:
03.01	Identify, describe, and demonstrate the established functional and aesthetic goals and objectives that direct the programming process.
03.02	Demonstrate an understanding of diverse client needs.
03.03	Identify, define, and apply known methods of collecting information.
03.04	Create and interpret a design matrix and other schematic processes.
03.05	Define and/or illustrate bubble diagrams and block planning.
03.06	Describe spatial adjacency, utilization, circulation, light, and function.
03.07	Identify and apply the required adjacency and spatial considerations in interior spaces.
03.08	Identify and apply the requirements of good traffic circulation.
03.09	Verify appropriate allocations of space according to programmatic needs.
03.10	Sketch preliminary layouts.
03.11	Identify the differences between the form and usage of public and private spaces.
04.0	Select and arrange furniture, fixtures, fabrics, equipment, and accessories. The student will be able to:
04.01	Analyze the criteria for the selection and arrangement of furnishings for the client.
04.02	Develop a furniture arrangement and traffic plan.
04.03	Select bathroom and kitchen fixtures.
04.04	Select kitchen and bath cabinets for an interior design plan.
04.05	Identify and compare the different fabrics available and recognize characteristics such as durability, texture, comfort, and end use.
04.06	Identify precedents in the use of furnishings.
05.0	Identify the appropriate uses and functions of materials. The student will be able to:

05.01	Identify and analyze flooring materials and determine the advantages and disadvantages of each type.
05.02	Analyze the characteristics of fibers and the construction of various types of floor coverings and interior fabrics.
05.03	Identify various ceiling treatments.
05.04	Identify and categorize types of wall coverings.
05.05	Identify and describe the types and functions of windows.
05.06	Identify and describe the different types of window coverings.
05.07	Demonstrate the ability to calculate the quantity needed for flooring, window treatments, and wall coverings.
05.08	Consider maintenance and/or recycling requirements when specifying materials.
06.0	Identify, research, and specify interior design materials and resources. The student will be able to:
06.01	Identify manufacturers of lighting, architectural treatments, and accessories.
06.02	Identify resources for recyclable materials.
06.03	Demonstrate an understanding of the differences in quality of design materials.
06.04	Identify and describe aspects of interior materials and installation methods that have the potential to impact the health, safety, and welfare of residential and/or commercial clientele.
06.05	Identify and describe the roles manufacturers' representatives, contractors, and other resource specialists play in assisting the designer and client in the appropriate selection, design, specification, and installation of materials and finishes for design projects.
06.06	Identify and describe the roles testing standards, agencies, and ratings have on the designer's selection and the specification of materials and products to protect the health, safety, and welfare of the client and the public.
07.0	Research and specify appropriate interior lighting. The student will be able to:
07.01	Identify lighting requirements.
07.02	Relate lighting options and the selection of lighting fixtures to interior design.
07.03	Identify appropriate lighting fixtures for efficient and effective performance in residential and/or commercial interior design projects.
07.04	Identify and describe human responses to light contrast.
07.05	Identify and describe the effects of contrast and diffusion on interior spaces.
07.06	Describe the impact (positive and negative) of daylight on interiors.

07.07	Describe the various means of controlling daylight impact on interiors.
07.08	Identify and describe lighting needs for clients with special needs.
07.09	Identify and define the characteristics and sources of man-made light.
07.10	Identify and describe the color characteristics of artificial lighting.
07.11	Identify and apply sustainable/green design concerns and other economic issues related to lighting design (e.g., initial costs, maintenance, replacement).
07.12	Identify, describe, and apply knowledge of both architectural and portable lighting.
07.13	Apply knowledge of appropriate fixture placement and location to interior design projects.
07.14	Identify, describe, and apply the appropriate placement and selection of light switches.
07.15	Identify and describe the codes and regulations that impact lighting design as related to health, safety and welfare requirements.
08.0	Identify interior methods and systems in building construction. The student will be able to:
08.01	Identify methods and techniques of construction.
08.02	Read basic plans.
08.03	Describe the advantages of applying green design considerations to construction decisions.
08.04	Identify the different materials and assemblies employed in the construction of partitions, walls, and ceilings for residential and commercial application.
08.05	Identify the types of millwork, woods, veneers and finishes available.
08.06	Identify and describe the appropriate cuts of lumber and timber for construction or millwork application.
08.07	Identify the appropriate installation systems for wall paneling and acoustical ceilings.
09.0	Identify interior building codes, regulations, and legislation pertaining to residential and non-residential spaces. The student will be able to:
09.01	Identify residential and non-residential local, state, and national building codes.
09.02	Identify legislation regarding barrier-free environment.
09.03	Identify regulations concerning health and safety codes.
09.04	Cite labeling techniques identifying products that meet flammability standards required by fire code.

09.05	Identify the different requirements based on type of occupancy and type of construction.
09.06	Describe the material ratings and resistance of materials to fire.
09.07	Identify ADA requirements relative to the design of interior spaces.
09.08	Identify residential building codes.
10.0	Communicate design concepts through visual and oral presentation skills. The student will be able to:
10.01	Use sketching techniques, drafting equipment, and/or computer programs to communicate interior design projects.
10.02	Demonstrate the use and care of equipment.
10.03	Demonstrate neatness and accuracy.
10.04	Execute line work by hand and/or by CAD.
10.05	Illustrate graphic notations and scale in a hand-drawing or CAD drawing.
10.06	Demonstrate overlapping techniques.
10.07	Explain detail drawings.
10.08	Illustrate shade and shadow from natural light sources by hand-drawing and/or CAD drawing.
10.09	Apply methods and techniques for two-dimensional and three-dimensional illustrations.
10.10	Apply the methods and techniques of one-point perspective drawing and two-point perspective drawing.
10.11	Create, analyze, and evaluate oral and graphic techniques for oral and visual presentations.
10.12	Demonstrate layout techniques for presentations by applying the principles of design.
10.13	Use lettering techniques and font selection for presentations.
10.14	Use graphic design and presentation skills to compile and review a portfolio (printed and/or digital).
11.0	Demonstrate employability skills and identify job and career opportunities. The student will be able to:
11.01	Conduct a job search.
11.02	Secure information concerning a job.
11.03	Identify documents that may be required to apply for a job.

11.04	Demonstrate job interview techniques.
11.05	Identify or demonstrate appropriate responses to criticism from an employer, supervisor, coworker, or customer.
11.06	Identify and/or demonstrate acceptable work habits.
11.07	Demonstrate acceptable employee health habits.
11.08	Demonstrate customer relations skills.
11.09	Evaluate sources of employment information.
11.10	Identify post-A.S. degree options (e.g., 4-year degrees, licensing/NCIDQ, certifications, LEED, CAPS).
11.11	Identify job and career opportunities in the interior design industry.
12.0	Identify professional business organization and development procedures and/or systems. The student will be able to:
12.01	Identify interior design industry-related professional organizations.
12.02	Analyze the business practices and procedures necessary for the operation of an interior design business.
12.03	Recognize the legal and business terms used in the field of interior design.
12.04	Describe the legal considerations and forms necessary to the practice of interior design.
12.05	Describe the procedures used in current interior design work experience.
12.06	Identify considerations for selecting the location of a business.
12.07	Describe the organizational structure of an interior design firm.
12.08	Identify the principles of record keeping (e.g., proposals, invoices, billable hours, markups).
12.09	Identify types of contracts utilized by an interior design firm.
12.10	Cite the licensing requirements needed to operate a business.
12.11	Identify the methods or techniques of supply procurement.
12.12	Demonstrate an understanding of the code of ethics for professional designers as prepared by industry-related professional organizations.
12.13	Demonstrate an understanding of licensing requirements.
12.14	Demonstrate an understanding of the uses of social media as a marketing tool for the interior design field.

13.0	Recognize, identify, and/or analyze historical, cultural, and societal influences on structures, interiors, and furnishings. The student will be able to:
13.01	Identify and analyze the characteristics of historic design in relation to the history of interiors.
13.02	Identify, recognize, compare, and describe different movements and historical periods in the evolution of architecture and interior design (e.g., Roman and Greek influences, styles of Middle Ages, the effects of the Italian Renaissance and the French Renaissance, Spanish and Islamic influences, English/British influences).
13.03	Analyze the work of contemporary architects, interior designers, and furniture designers.
13.04	Apply knowledge and appropriate synthesis of design forms with furnishings, finishes, and materials in interior design projects.
13.05	Describe how architecture, furniture, and decorative arts relate to interior design throughout history.
14.0	Analyze and apply the concepts of adaptive reuse, renovation, restoration, and/or the historic preservation of existing structures. The student will be able to:
14.01	Describe the significant issues and fundamentals of adaptive reuse, renovation, restoration, and historic preservation.
14.02	Compare adaptive reuse, renovation, restoration, and historic preservation options.
14.03	Identify sources for researching historical period data.
15.0	Incorporate evaluation, space planning, layout, workflow, and design into a project. The student will be able to:
15.01	Develop a plan for the implementation of design concepts into a design project.
15.02	Apply design methods and techniques to a project in residential interior design.
15.03	Apply design methods and techniques to a project in nonresidential interior design.
15.04	Understand and apply programming sequences in a design product.
15.05	Demonstrate an understanding of design development stages by completing a design project.
15.06	Identify the purpose and content of a post-occupancy evaluation.
15.07	Define a schedule for installations.
15.08	Research catalog price lists and understand the importance of preparing order forms.
15.09	Prepare furniture, fixtures, and equipment specifications for a project.
15.10	Describe finish schedules/plans.
16.0	Identify the categories (high, medium, low) involved in the calculation of a budget estimate for an interior design project. The student will be able to:

16.01	Describe the categories of materials, furnishings, equipment, overhead, and services to be provided.
16.02	Identify different methods available to estimate the cost of a project.
16.03	Develop and prepare a budget for a project.
17.0	Learn the process of manually and/or electronically preparing a complete set of working construction drawings for a building. The student will be able to:
17.01	Organize a construction package according to content categories.
17.02	Coordinate documents from different parties involved in the process of compiling construction drawings.
17.03	Utilize standard graphics and symbols.
17.04	Specify millwork and special features.
18.0	Identify the importance of acoustics on habitable spaces. The student will be able to:
18.01	Identify, describe, and/or apply the basic principles, concepts, and qualities of sound as they affect human perception.
18.02	Demonstrate an understanding of sound transmission and levels.
18.03	Identify and/or apply the fundamentals of sound absorption to evaluate the means that might be employed to control the acoustic quality of a space.
18.04	Demonstrate an understanding of and/or apply the knowledge of spatial organization and surface treatments for walls, ceilings, and finishes to achieve desired results in sound balance and comfort in an interior.
19.0	Create a Life Safety Plan. The student will be able to:
19.01	Calculate the occupancy load of a space and the required number of exits.
19.02	Describe the appropriate exit sizes, travel distances, and location of exits within a room or corridor.
19.03	Choose appropriate door types for access and egress.
19.04	Locate stairways to meet fire-safety requirements.
19.05	Identify the differences between residential and commercial access and egress requirements.
20.0	Design safe and universally accessible spaces. The student will be able to:
20.01	Identify the use of ramps and automated systems designed to accommodate persons with disabilities.
20.02	Demonstrate an understanding of the anthropometrics and ergonomics of a disabled person to aid in the selection of fixtures, floor surfaces, and bathroom layouts.

20.03	Implement the principles of Uniform Standards for Universal Design.
20.04	Describe and implement Aging in Place methodology.
21.0	Identify the elements of a basic agreement between the designer and the client; identify services and responsibilities. The student will be able to:
21.01	Describe the scope of basic interior design services.
21.02	Outline the mutual responsibilities of the owner and the designer.
22.0	Demonstrate knowledge of computer skills. The student will be able to:
22.01	Demonstrate knowledge of CAD and/or other comparable programs utilized in the industry.
22.02	Demonstrate knowledge of 2D and 3D computer drawing and graphics software.
22.03	Identify and research interior design sources on the Internet.
22.04	Demonstrate proficiency in printing and/or drawing to scale.
22.05	Input, manipulate, and export computer images using a variety of software programs and/or Internet resources.
22.06	Demonstrate design solutions and support information using various software programs.
23.0	Identify, research, and design sustainable interiors. The student will be able to:
23.01	Recognize, define, and understand the concepts and terminology of green/sustainable design and energy and water conservation.
23.02	Describe the differences between sustainable and green design.
23.03	Describe and apply the practice of Environmentally Responsible Interior Design (ERID).
23.04	Demonstrate the ability to identify, research, and use sustainable materials in interior design.
23.05	Identify the governing organizations associated with sustainable design.
23.06	Evaluate the cost of green/sustainable design; consider initial and long-term costs.
23.07	Recognize the concepts associated with sustainable design.
23.08	Define the terminology associated with sustainable design.
23.09	Identify appropriate sustainable design resources.
23.10	Identify the costs and requirements of sustainable design.

23.11	Identify the principles of sustainable lighting, acoustics, thermal comfort, and indoor air quality to enhance the health, safety, welfare, and performance of occupants.
23.12	Demonstrate an understanding of the concepts, principles, and theories of sustainability as they pertain to building methods, materials, systems, and occupants.
23.13	Identify sustainable interior construction and building systems.
23.14	Demonstrate an understanding of daylight, energy efficient luminaires, and alternative energy sources.
24.0	Develop and maintain a professional portfolio. The student will be able to:
24.01	Develop a professional portfolio (traditional and digital) that contains samples of work; maintain the portfolio.
24.02	Create a résumé and include in the portfolio.
25.0	Participate in an internship. The student will be able to:
25.01	Establish achievable goals related to an internship.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

General Education Course Requirements for AS and AAS Degrees

State Board of Education Rule 6A-14.030(4), F.A.C., identifies 15 credit hours as the minimum amount of general education coursework required in the Associate of Science (AS) degree and the Associate of Applied Science (AAS) degree. In addition, Rule 6A-14.0303, F.A.C., implements s. 1007.25, F.S., and requires students entering a technical education degree program in the 2022-2023 academic year, and thereafter, to complete at least one identified core course in each subject area as part of the general education course requirements (15 credit hours total) before a degree is awarded) The core subject areas include:

- Communication.
- Humanities.
- Mathematics.
- Natural Sciences.
- Social Sciences.

Career and Technical Student Organization (CTSO)

Collegiate DECA - Delta Epsilon Chi is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Certificate Programs

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates (CCC):

Home Staging Specialist (0450040807) - 12 credit hours
Kitchen and Bath Specialization (0450040805) - 39 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Television and Media Production
Career Cluster: Arts A/V Technology and Communication

AS	
CIP Number	1609070213
Program Type	College Credit
Program Length	60 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment as television and video production personnel. Job titles include independent video producer, camera operator, floor director, technical producer, videographer, video editor, location/studio sound operator, broadcast graphics designer and webcast producer/director.

The content includes, but is not limited to, television, broadcast, video, design and Internet media training. This program focuses on broad transferable skills and stresses understanding and demonstration of the following elements of the television video and Internet/webcast industries: lighting, photography, design, camera operation, floor and television direction, post-production, editing and webcast production. Also included are skills relating to professionalism, employability, communication and management. Programs may include the following specialization areas: Broadcast Television, Video Production or Internet/Webcast Production.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 60 credit hours.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate effective communication skills.
- 02.0 Demonstrate the ability to collaborate with others.
- 03.0 Demonstrate safe and efficient work practices.
- 04.0 Demonstrate knowledge of appropriate industry laws, regulations, trade terminology and ethical practices.
- 05.0 Develop a project proposal and script.
- 06.0 Generate a production schedule.
- 07.0 Plan a production set.
- 08.0 Acquire appropriate production resources.
- 09.0 Create appropriate lighting for location and/or set productions.
- 10.0 Operate studio and field video cameras.
- 11.0 Record, mix and edit audio resources.
- 12.0 Demonstrate knowledge of and skills related to streaming media.
- 13.0 Operate control room equipment.
- 14.0 Organize and edit video resources.
- 15.0 Design and generate graphic elements.
- 16.0 Direct a TV/video production or webcast.
- 17.0 Plan, coordinate, and manage a TV or video-based production.
- 18.0 Create a marketing and distribution plan.
- 19.0 Demonstrate appropriate writing skills.
- 20.0 Demonstrate employability skills.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Television and Media Production
CIP Numbers: 1609070213
Program Length: 60 credit hours

At the completion of this program, the student will be able to:

01.0 Demonstrate effective communication skills. The student will be able to:

01.01 Demonstrate presentation skills.

01.02 Prepare written correspondence.

01.03 Demonstrate effective oral communication skills.

01.04 Read and interpret written and oral directions.

02.0 Demonstrate the ability to collaborate with others. The student will be able to:

02.01 Demonstrate management and leadership abilities.

02.02 Demonstrate the ability to work as part of a team.

03.0 Demonstrate safe and efficient work practices. The student will be able to:

03.01 Follow industry safety rules, regulations and policies.

03.02 Demonstrate awareness of appropriate ergonomics.

03.03 Demonstrate the proper care and use of equipment.

04.0 Demonstrate knowledge of appropriate industry laws, regulations, terminology and ethical practices. The student will be able to:

04.01 Define Federal Communications Commission (FCC) regulations pertaining to broadcasting and industry distribution methods.

04.02 Utilize trade terminology appropriately.

04.03 Utilize trade abbreviations and acronyms as appropriate.

04.04 Define the laws and practices underlying rights, releases and permits.

04.05 Define the laws and practices underlying slander, libel, free speech and "truth in advertising" issues and privacy rights.

04.06	Define the laws and practices underlying indecent programming, obscenity and censorship issues.
04.07	Define the laws and practices underlying contract, labor, copyright and insurance/liability issues.
05.0	Develop a project proposal and script. The student will be able to:
05.01	Identify a project goal.
05.02	Create a project budget.
05.03	Write a production script.
05.04	Develop a storyboard from a script.
05.05	Develop and/or respond appropriately to a request for proposal (RFP).
06.0	Generate a production schedule. The student will be able to:
06.01	Define the segment or program type.
06.02	Identify and acquire the necessary production resources.
06.03	Establish viable production time frame targets.
07.0	Plan a production set. The student will be able to:
07.01	Define the set requirements for a specific program type.
07.02	Develop and supervise set assembly and contract work.
07.03	Determine the required props, costumes, and other resources.
07.04	Acquire appropriate locations for segment type.
08.0	Acquire appropriate production resources. The student will be able to:
08.01	Identify project funding sources.
08.02	Acquire rights, releases and permits.
08.03	Cast talent.
08.04	Define personnel needs for production crew positions.
08.05	Define the tasks for contract professionals.

09.0	Create appropriate lighting for location and/or set productions. The student will be able to:
09.01	Determine appropriate lighting needs for production settings.
09.02	Identify locations and studio lighting types, methods of use and application.
09.03	Use lighting equipment according to industry safety standards.
09.04	Define light quality in terms of intensity, color, direction and characteristics.
09.05	Light a location set with ambient/available and supplemental lighting.
09.06	Use lighting for effect to control mood and impact in production settings.
09.07	Use studio lighting master control equipment.
10.0	Operate studio and field video cameras. The student will be able to:
10.01	Use current industry standard video production equipment.
10.02	Operate a camera in studio and location (field) production environments.
10.03	Plan a shot to obtain the required action/footage.
10.04	Demonstrate appropriate shot sequences, transitions, and post-production (editing) effects.
10.05	Control camera movement to obtain the required effects.
10.06	Control lens, focal length, aperture and exposure to obtain the required effects.
10.07	Set up the camera and recording equipment sequence.
10.08	Perform appropriate pre-production checks of equipment function.
10.09	Perform basic routine, preventative and repair maintenance on video equipment.
10.10	Define the various recording formats and media.
10.11	Define appropriate digital compression and signal (file) types.
11.0	Record, mix and edit audio resources. The student will be able to:
11.01	Identify and select microphones for production needs.
11.02	Determine optimal microphone placement.

11.03	Set up audio recording equipment.
11.04	Establish appropriate recording conditions.
11.05	Perform appropriate pre-production checks of production equipment.
11.06	Set up the audio mixing console and control equipment.
11.07	Acquire library and archive sound assets.
11.08	Perform sound edits and enhancements.
11.09	Perform sound dubs and overdubs.
11.10	Record location sound.
11.11	Record studio live sound.
11.12	Prepare recorded files for production use.
11.13	Record voice-over (VO) and soundtrack.
11.14	Perform routine and preventative maintenance.
12.0	Demonstrate knowledge of and skills related to streaming media. The student will be able to:
12.01	Identify the technology to use for streaming media.
12.02	Operate the technology for steaming media.
12.03	Update, post and utilize Internet resources for audio and video.
12.04	Stream various media; include webcasting.
12.05	Post audio and video on database-driven and web-hosted sites for downloading and/or streaming.
13.0	Operate control room equipment. The student will be able to:
13.01	Define control room functions in a production.
13.02	Operate the audio console (mixer) in a production.
13.03	Operate visual control equipment.
13.04	Operate a production switcher.

13.05	Operate the routing switcher according to production requirements.
13.06	Follow legal standards for broadcast audio/video signal and levels.
13.07	Maintain production values and continuity.
13.08	Operate the Camera Control Unit (CCU).
14.0	Organize and edit video resources. The student will be able to:
14.01	Log and organize video resources.
14.02	Operate editing hardware and software.
14.03	Digitize video resources into post-production equipment and workflow.
14.04	Edit video, graphic elements, and audio.
14.05	Maintain continuity and production values.
14.06	Apply color correction to video footage.
14.07	Transfer the finished edit to appropriate media for streaming, distribution, or archiving.
15.0	Design and generate graphic elements. The student will be able to:
15.01	Determine the graphic requirements for a production.
15.02	Operate graphic production software.
15.03	Produce broadcast graphic elements for titling, credits, and graphic transitions.
15.04	Set up and operate character generator equipment and software.
15.05	Generate appropriate special effects for a production.
15.06	Demonstrate an understanding of graphic image types and files.
15.07	Use image-editing software.
15.08	Demonstrate the ability to use type, color, composition and graphic elements for specific production effects.
16.0	Direct a TV/Video production or webcast. The student will be able to:
16.01	List and explain crew functions that come under the director's control.

16.02	Direct on-camera talent.
16.03	Direct the crew during production.
16.04	Direct camera operation, lighting and sound recording functions.
16.05	Direct set, property, and craft services.
16.06	Oversee continuity and production values.
17.0	Plan, coordinate, and manage a TV or video-based production. The student will be able to:
17.01	Define the program/segment format and market.
17.02	Present a project proposal and script for approval.
17.03	Develop a production schedule.
17.04	Create a plan to acquire all required production resources and talent.
17.05	Manage crew and staff during pre-planning and production.
17.06	Determine post-production requirements.
17.07	Coordinate post-production activities.
17.08	Conduct project evaluations.
17.09	Direct final production values.
17.10	Archive and manage finished assets and originals.
17.11	Oversee broadcast/distribution to market.
17.12	Explain various techniques for program or segments promotion.
17.13	Explain the techniques and procedures of web hosts, portals, television broadcast and cable networks, syndication and public broadcasters.
18.0	Create a marketing and distribution plan. The student will be able to:
18.01	Identify potential markets.
18.02	Identify clients.
18.03	Prepare bids and proposals.

18.04	Determine distribution method and format.
18.05	Define distribution logistics and technical requirements.
18.06	Determine the user interface for interactive elements.
18.07	Develop the delivery schedule.
18.08	Manage duplication/replication and distribution activities.
18.09	Develop revenue and payment projections.
19.0	Demonstrate appropriate writing skills. The student will be able to:
19.01	Write audio and video scripts for narrative, documentary, news, and related script styles.
19.02	Demonstrate appropriate use of formats for various script styles.
19.03	Write copy for TV, radio, and web-based delivery.
19.04	Demonstrate correct use of English language and grammar in written reports about technology, planning, justifications and related industry job requirements.
20.0	Demonstrate employability skills. The student will be able to:
20.01	Create and write a résumé and cover letter.
20.02	Prepare and develop a portfolio to present in the appropriate format for the chosen medium.
20.03	Create an online resume with a link to/website link to showcase video/radio work.
20.04	Secure information about a job position.
20.05	Identify documents that may be required when applying for a job interview.
20.06	Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other employees.
20.07	Identify acceptable work habits.
20.08	Demonstrate knowledge of the Federal Hazard Communication regulation (29 CFR 1910.1200).

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

General Education Course Requirements for AS and AAS Degrees

State Board of Education Rule 6A-14.030(4), F.A.C., identifies 15 credit hours as the minimum amount of general education coursework required in the Associate of Science (AS) degree and the Associate of Applied Science (AAS) degree. In addition, Rule 6A-14.0303, F.A.C., implements s. 1007.25, F.S., and requires students entering a technical education degree program in the 2022-2023 academic year, and thereafter, to complete at least one identified core course in each subject area as part of the general education course requirements (15 credit hours total) before a degree is awarded) The core subject areas include:

- Communication.
- Humanities.
- Mathematics.
- Natural Sciences.
- Social Sciences.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Certificate Programs

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates (CCC):

- Broadcast Production (0610020216) - 24 credit hours
- Digital Video Fundamentals (0610020205) - 12 credit hours
- Television Studio Production (0610020200) - 12 credit hours
- Video Editing and Post-Production (0650060200) - 24 credit hours
- Webcast Media (0650010215) - 12 credit hours
- Webcast Technology (0650010218) - 24 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education
Curriculum Framework**

Program Title: New Media Communication
Career Cluster: Arts, A/V Technology and Communication

AS	
CIP Number	1609090200
Program Type	College Credit
Program Length	60 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content of this program includes, but is not limited to, the theoretical and technical processes of large and small scale communication, storytelling, journalism, and electronic content design and delivery. In particular, this program immerses the student in an examination of how to navigate new media communication platforms. Students also develop the appropriate business acumen and ethical sense to succeed amid the changing communication/media landscape. This program focuses on the application of emergent electronic and digital media platforms, addresses cultural changes affecting content creation and reception, and teaches effective digital storytelling techniques.

The purpose of this program is to prepare students for employment in traditional and new media fields (e.g., new media coordinators, communication specialists, copywriters, bloggers, digital journalists, editors, online news writers, social media coordinators, online newsroom managers, communication coordinators, entry level production or media staff, content developers, production specialists, other related new media careers).

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 60 credit hours.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate effective professional, interpersonal, and intercultural communication skills.
- 02.0 Demonstrate the fundamental skills of the writing process for varied mass and new media communication platforms.
- 03.0 Demonstrate appropriate technical, analytical, and evaluative skills for new media content creation, delivery, and social impact.
- 04.0 Utilize a variety of digital applications for the production and distribution of new media projects.
- 05.0 Demonstrate understanding of new media communication web-based user-generated content, usability, and interoperability.
- 06.0 Demonstrate employability skills and participate in learning experiences relative to new media communication.
- 07.0 Demonstrate an understanding of the technical and industrial competencies relative to new media communication.
- 08.0 Demonstrate an understanding of research methods impacting new media communication content design and delivery.

**Florida Department of Education
Student Performance Standards**

Program Title: New Media Communication
CIP Number: 1609090200
Program Length: 60 credit hours

At the completion of this program, the student will be able to:

01.0	Demonstrate effective professional, interpersonal, and intercultural communication skills. The student will be able to:
01.01	Demonstrate an understanding of varied communication theories.
01.02	Demonstrate effective oral communication and presentation skills.
01.03	Demonstrate understanding and appropriately apply modes of expression in written, visual, oral, and new media communication.
01.04	Demonstrate capacity to search for, synthesize, and disseminate information.
01.05	Participate effectively in group settings with emphasis on listening, persuasion, critical and reflective thinking, and responding.
01.06	Demonstrate understanding of cultural awareness and cultural “otherness.”
01.07	Demonstrate understanding of how culture and cultural differences affect new media communication design and delivery.
01.08	Demonstrate the skills required to interactively and critically participate in new media environments and platforms.
01.09	Identify the role of language in communication and new media contexts.
01.10	Analyze and evaluate the impact of language on cognition, communities, cultures, and organizations.
01.11	Demonstrate understanding of electronic or digital discourse and its impact on human interaction and new media communication.
01.12	Prepare and verbally deliver factual material in a direct and logical manner.
01.13	Demonstrate scholarly research skills.
01.14	Demonstrate the effective use of visual aids, technical equipment, and projected images appropriate for new media.
01.15	Demonstrate professional interviewing skills and general interpersonal communications.
01.16	Produce a body of work that demonstrates proficiency in language, spelling, mechanics, and grammar.
01.17	Increase listening skills and the retention of information.

01.18	Demonstrate understanding of effective methods of organizational change and leadership.
02.0	Demonstrate the fundamental skills of the writing process for varied mass and new media communication platforms. The student will be able to:
02.01	Understand the nature of good writing and explain how writing for mass and/or new media communication differs from other formal writing forms.
02.02	Recognize and compose grammatically correct writing.
02.03	Demonstrate mastery of English grammar, syntax, and punctuation.
02.04	Detail the elements of style that characterize the AP stylebook.
02.05	Compose written media using established web-based technologies and software applications.
02.06	Utilize the AP stylebook in print and/or digital form to answer queries and verify appropriate usage.
02.07	Demonstrate proficiency in writing clear, informative captions to accompany images.
02.08	Demonstrate understanding of visual media/images and the impact of these images on composition.
02.09	Utilize spreadsheet software to organize and analyze data, perform calculations, and draft executive summaries for publication.
02.10	Interpret, transcribe, and communicate information, data, and observations in a variety of new media formats.
02.11	Prepare well-written professional communications/articles and reports using publishing applications and software for new media.
03.0	Demonstrate appropriate technical, analytical, and evaluative skills for new media content creation, delivery, and social impact. The student will be able to:
03.01	Demonstrate understanding of media content at a literal level (e.g., capture others' ideas published on varied media platforms).
03.02	Successfully interpret the meaning of new/emergent short content forms.
03.03	Demonstrate the ability to utilize new media, digital publishing, and digital imaging software.
03.04	Demonstrate the ability to interpret and construct dynamic models (simulation) and navigate information across various modalities.
03.05	Demonstrate understanding of media authorship, format, and audience.
03.06	Demonstrate understanding of the construction of media as a subjective and social process.
03.07	Demonstrate understanding of new media content creation processes and delivery.
03.08	Demonstrate understanding of co-creation and sharing relative to new media content creation.

03.09	Demonstrate understanding of and the ability to evaluate embedded values and ideologies in media/new media content.
03.10	Demonstrate understanding of the active/reactive or responsive nature of new media.
03.11	Demonstrate knowledge of content analytics and its methods of evaluation.
04.0	Utilize a variety of digital applications for the production and distribution of new media projects. The student will be able to:
04.01	Demonstrate proficiency in the use of appropriate new media, digital publishing, and digital imaging software applications.
04.02	Perform pre-production and post-production routines with new media-related hardware and software.
04.03	Understand compression techniques; demonstrate appropriate audio and video production and editing techniques.
04.04	Demonstrate the ability to establish web-based communicative content and accounts.
04.05	Demonstrate understanding of the relationship between psychology and user interface design and interaction design (IxD).
04.06	Demonstrate knowledge of various instructional and design methods for delivery of new media content on the Internet.
04.07	Identify a variety of web page design programs and programming standards; create web-based media content.
04.08	Utilize text editors for coding HTML.
04.09	Apply graphic design principles for the creation of web-based media content.
04.10	Demonstrate knowledge of project planning and production for new media content and delivery.
04.11	Complete web-based new media projects as defined by current industry needs.
04.12	Demonstrate proficient knowledge and use of Cascading Style Sheets (CSS), HTML5, Flash, search engine optimization (SEO), and content management systems (CMS).
05.0	Demonstrate understanding of new media communication web-based user-generated content, usability, and interoperability. The student will be able to:
05.01	Understand and demonstrate the use of metadata and design methods to enhance visibility and response rate.
05.02	Understand and demonstrate the use of appropriate assessment models for the efficacy of new media content delivery.
05.03	Demonstrate understanding of the elements of aesthetics in new media content creation and use.
05.04	Demonstrate understanding of how to create a user testing system to evaluate the efficacy of new media content delivery.
05.05	Demonstrate the ability to integrate information from a database within a new media or web-based structure.

05.06	Demonstrate understanding of user-generated content and interoperability in new media communication processes and platforms.
05.07	Demonstrate understanding of the impact of social networking on new media content delivery.
05.08	Utilize appropriate digital content tools to create new media projects emphasizing personal expression and storytelling.
05.09	Create and maintain various new media platforms and utilize content analytics.
05.10	Demonstrate understanding of the process of combining computer-generated imagery (CGI) with video/film elements.
06.0	Demonstrate employability skills and participate in learning experiences relative to new media communication. The student will be able to:
06.01	Demonstrate appropriate professional writing skills for producing and sharing media files, documents, and other forms of communication.
06.02	Utilize software applications to organize and analyze data, perform calculations and draft executive summaries for publication.
06.03	Examine and evaluate the business practices vital to the success of new media content creation and delivery.
06.04	Demonstrate understanding of organization and business communication practices.
06.05	Identify barriers to accurate and appropriate communication and demonstrate the ability to effect organizational changes.
06.06	Demonstrate understanding of the basic principles of finance, accounting, management, and marketing for new media communication.
06.07	Demonstrate knowledge of intellectual property, copyright, trademark, and basic contract law.
06.08	Demonstrate knowledge of appropriate ethical conduct.
06.09	Demonstrate knowledge of corporate social responsibility (CSR) standards for public relations and new media.
06.10	Acquire appropriate cultural capital and global citizenship skills necessary for success in a professional work environment.
06.11	Adapt learned skills and generate new approaches to solve specific production problems.
07.0	Demonstrate an understanding of the technical and industrial competencies relative to new media communication. The student will be able to:
07.01	Demonstrate proficiency in new media software applications.
07.02	Design and implement navigational structures for interactive new media environments/platforms.
07.03	Demonstrate the ability to synthesize the component elements of available new media technologies into a unified project.
07.04	Demonstrate the ability to engage in bilateral interaction to create new media content.

07.05	Demonstrate understanding of the differences between Web 1.0 and Web 2.0 and the latter's impact on new media communication.
07.06	Demonstrate understanding of the technical hardware/software utilized for the coordination and production of content.
07.07	Demonstrate the ability to use electronic reference materials for the assimilation and analysis of information and the production of content.
07.08	Demonstrate the ability to discern the quality and value of information collected via digital technologies; recognize bias.
07.09	Access, analyze, and implement appropriate and relevant quality assurance standards of practice.
07.10	Use a variety of computer platforms to demonstrate knowledge of storyboarding, interactivity, and scripting.
08.0	Demonstrate an understanding of research methods impacting new media communication content design and delivery. The student will be able to:
08.01	Identify and analyze essential ideas in research design, instrumentation, data collection, and analysis for new media communication.
08.02	Demonstrate foundational understanding of quantitative and qualitative research design processes for new media communication.
08.03	Conceptualize and develop a research proposal using quasi-experimental design methods.
08.04	Demonstrate basic understanding of how to build a framework for the use of statistics in communication processes.
08.05	Demonstrate understanding of conditions for internal and external validity.
08.06	Demonstrate understanding of the challenges in communication research that arise from differences in culture.
08.07	Demonstrate intercultural sensitivity and identify the impact of globalization on new media communication and research.
08.08	Demonstrate understand and use of research software for new media communication.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

General Education Course Requirements for AS and AAS Degrees

State Board of Education Rule 6A-14.030(4), F.A.C., identifies 15 credit hours as the minimum amount of general education coursework required in the Associate of Science (AS) degree and the Associate of Applied Science (AAS) degree. In addition, Rule 6A-14.0303, F.A.C., implements s. 1007.25, F.S., and requires students entering a technical education degree program in the 2022-2023 academic year, and thereafter, to complete at least one identified core course in each subject area as part of the general education course requirements (15 credit hours total) before a degree is awarded) The core subject areas include:

- Communication.
- Humanities.
- Mathematics.
- Natural Sciences.
- Social Sciences.

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SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Certificate Programs

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates (CCC):

Communication Leadership (0609090200) – 18 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education
Curriculum Framework**

Program Title: Radio and Television Broadcasting
Career Cluster: Arts A/V Technology and Communication

AS	
CIP Number	1610020202
Program Type	College Credit
Program Length	64 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare the student for employment in radio and television broadcasting.

The content includes but is not limited to commercial TV and radio/studio assisting, camera operating, technical directing, audio controlling, gaffing, grip, or script writing. This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the Radio and Television industry; planning, management, technical and production skills, underlying principles of technology, community issues and health, safety, and environmental issues.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 64 credit hours.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of television production safety procedures and trade terminology.
- 02.0 Plan a set for television production.
- 03.0 Perform lighting activities for a planned production.
- 04.0 Operate studio camera.
- 05.0 Perform video recording and editing operations.
- 06.0 Perform television production activities.
- 07.0 Perform character generator and special effects generator functions.
- 08.0 Operate television studio audio control system.
- 09.0 Perform Electronic News Gathering (ENG) and Electronic Field Production (EFP) equipment functions.
- 10.0 Perform routine operator preventative maintenance operations.
- 11.0 Demonstrate appropriate communication skills.
- 12.0 Operate control room equipment.
- 13.0 Demonstrate radio broadcasting skills.
- 14.0 Explain and demonstrate news broadcasting.
- 15.0 Write broadcast news.
- 16.0 Explain and demonstrate ability to properly control traffic.
- 17.0 Write commercial copy.
- 18.0 Explain programming concepts.
- 19.0 Describe business aspects of broadcasting.
- 20.0 Explain surveys and demographics.
- 21.0 Explain rules and regulations governing radio broadcasts.
- 22.0 Perform radio broadcasting functions.
- 23.0 Demonstrate employability skills.
- 24.0 Demonstrate an understanding of entrepreneurship.

**Florida Department of Education
Student Performance Standards**

Program Title: Radio and Television Broadcasting
CIP Number: 1610020202
Program Length: 64 credit hours

At the completion of this program, the student will be able to:

01.0 Demonstrate knowledge of television production safety procedures and trade terminology. The student will be able to:

01.01 Describe the television studio workflow.

01.02 State and apply general safety rules for operating equipment in the television studio.

01.03 Understand terminology used in the television studio.

01.04 Transport equipment safely and securely.

01.05 Store equipment in appropriate locations.

02.0 Plan a set for television production. The student will be able to:

02.01 Prepare television set for a planned production.

02.02 Draw and design a set plan to scale.

02.03 Select and arrange stage props.

02.04 Inspect and repair scenery as needed.

03.0 Perform lighting activities for a planned production. The student will be able to:

03.01 Describe types of lighting fixtures.

03.02 Identify parts of lighting fixtures.

03.03 Perform special-effects lighting.

03.04 Set-up appropriate lighting for a production.

03.05 Understand and operate lighting control software.

03.06 Analyze lighting needs for production.

03.07	Describe dangers of high intensity studio lighting.
03.08	Understand lighting theory.
04.0	Operate studio camera. The student will be able to:
04.01	Describe major parts of a studio camera.
04.02	Align camera for a studio production.
04.03	Perform appropriate camera movements.
04.04	Operate camera for commercial recording.
04.05	Operate camera for studio production.
04.06	Perform floor director's functions.
04.07	Understand CCU Camera Control Unit.
05.0	Perform video recording and editing operations. The student will be able to:
05.01	Understand editing terminology.
05.02	Apply media management skills.
05.03	Demonstrate picture and sound editing processes.
05.04	Apply post-production titling and graphics.
05.05	Understand the aesthetics of editing.
05.06	Understand and apply image and audio finishing techniques.
05.07	Understand and apply image delivery techniques.
05.08	Understand the process of manipulating still images.
06.0	Perform television production activities. The student will be able to:
06.01	Operate a video switcher.
06.02	Operate router for productions
06.03	Develop script for a program.

06.04	Draw story board for a planned production.
06.05	Direct participants in production of a program.
06.06	Perform on-camera.
06.07	Act as producer to get program from idea to air.
06.08	Operate through the lens teleprompter.
07.0	Perform character generator and special effects generator functions. The student will be able to:
07.01	Describe operational parts of character generator.
07.02	Set up character generator.
07.03	Describe inputs of special effects generator.
07.04	Operate special effects generator during production.
07.05	Operate character generator during production.
07.06	Demonstrate basic computer literacy.
07.07	Demonstrate knowledge of television graphics software.
08.0	Operate television studio audio control system. The student will be able to:
08.01	Identify and select microphones for production.
08.02	Place microphones for maximum effect.
08.03	Understand and operate audio editing software.
08.04	Record audio to appropriate audio editing software.
08.05	Recognize various audio file formats and their uses.
08.06	Describe parts of audio mixing console.
08.07	Operate audio mixing console.
09.0	Perform Electronic News Gathering (ENG) and Electronic Field Production (EFP) equipment functions. The student will be able to:
09.01	Complete a field production from writing, to shooting, to editing.

10.0	Perform routine operator preventative maintenance operations. The student will be able to:
10.01	Describe types of video connectors.
10.02	Describe types of audio connectors.
10.03	Replace bulb in light fixture.
11.0	Demonstrate appropriate communication skills. The student will be able to:
11.01	Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
11.02	Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
11.03	Read and follow written and oral instructions.
11.04	Answer and ask questions coherently and concisely.
11.05	Read critically by recognizing assumptions and implications and by evaluating ideas.
12.0	Operate control room equipment. The student will be able to:
12.01	Demonstrate a working familiarity and understanding of the functions of an audio console (mixer).
12.02	State the characteristics of various microphone types and demonstrate the ability to use them.
12.03	Demonstrate knowledge of and ability to use audio editing software.
12.04	Handle remote sources through the console.
12.05	Demonstrate how to handle an audio portion of a deejay show and news program, putting together all the elements of audio control in radio.
12.06	Demonstrate ability to work as an audio control operator in TV or radio studio production.
12.07	Understand the ad-lib format and show proficiency in that style of broadcast.
13.0	Demonstrate radio broadcasting skills. The student will be able to:
13.01	Outline the qualifications and requirements of an announcer.
13.02	Demonstrate development of the skills of announcing, the various techniques of delivery and procedures according to accepted standards.
13.03	Demonstrate the ability to perform to standards before a TV camera, visually and orally.

13.04	Perform the various assignments in a professional manner, for both radio and TV, according to industry standards.
14.0	Explain and demonstrate news broadcasting. The student will be able to:
14.01	Differentiate between news, commentary, and editorials.
14.02	Demonstrate ability to mark, edit, and present news in an acceptable manner.
14.03	Demonstrate ability to use the various equipment of a newsroom.
14.04	Identify the various sources of news and how they are used.
14.05	Demonstrate ability to ad-lib from the scene, interview guests, and type news stories.
14.06	Understand and interpret criticism of broadcast news.
15.0	Write broadcast news. The student will be able to:
15.01	List the elements that constitute news materials and evaluate them.
15.02	Demonstrate ability to write news stories in broadcast style.
15.03	Be able to use the broadcast style page format.
15.04	Understand the technique of using present of past perfect tense in writing broadcast news.
16.0	Explain and demonstrate ability to properly control traffic. The student will be able to:
16.01	State the duties of the traffic department.
17.0	Write commercial copy. The student will be able to:
17.01	Explain the job of a copy writer and outline the elements of good copy.
17.02	Demonstrate ability to write commercial continuity in its various forms.
17.03	Demonstrate ability to select and utilize music and sound effects in the production of recorded copy.
17.04	Demonstrate ability to edit, splice, dub, overlap sound or otherwise utilize various production techniques.
18.0	Explain programming concepts. The student will be able to:
18.01	List and explain the various functions under the control of the program director.
18.02	Differentiate between formats used in large and small markets.

18.03	Explain various methods of station promotion, including procedures and rules.
18.04	Explain the techniques and procedures of networks, syndication, news, talk, sports, special events, public service and music programs.
18.05	Identify the various music formats used in contemporary radio.
18.06	Understand FCC rules dealing with indecent programming and obscenity.
19.0	Describe business aspects of broadcasting. The student will be able to:
19.01	Explain the determination of cost and expense involved in station operation, the financial structure, the evaluation of time to the station and its clients.
19.02	Explain the requirements and regulations of station ownership.
19.03	Describe the development of media advertising and explain the various forms utilized in the industry today.
20.0	Explain surveys and demographics. The student will be able to:
20.01	Explain the methods of measurement used by broadcasters and evaluate their function in the overall operation of a station.
21.0	Explain rules and regulations governing radio broadcasts. The student will be able to:
21.01	Demonstrate a basic understanding of rules and regulations governing licenses, measurement and records, political broadcasts, and lottery laws.
21.02	Show an understanding of the features in broadcasting magazine including the update on broadcasting litigation and lawmaking.
22.0	Perform radio broadcasting functions. The student will be able to:
22.01	Perform to high standards in the role of audio operator, announcer, deejay, reporter, interviewer and commercial production, in varied format situations.
23.0	Demonstrate employability skills. The student will be able to:
23.01	Conduct a job search to include online job sites.
23.02	Formulate strategy for post-graduation.
23.03	Demonstrate knowledge of how to navigate the job market for growth in the industry.
23.04	Identify proper personal and professional ethics.
24.0	Demonstrate an understanding of entrepreneurship. The student will be able to:
24.01	Define entrepreneurship.

24.02	List the advantages and disadvantages of business ownership.
24.03	Identify the risk involved in owning a business.
24.04	Identify the personal characteristics of a successful entrepreneur.
24.05	Identify the business skills needed to operate a small video production business efficiently and effectively.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

General Education Course Requirements for AS and AAS Degrees

State Board of Education Rule 6A-14.030(4), F.A.C., identifies 15 credit hours as the minimum amount of general education coursework required in the Associate of Science (AS) degree and the Associate of Applied Science (AAS) degree. In addition, Rule 6A-14.0303, F.A.C., implements s. 1007.25, F.S., and requires students entering a technical education degree program in the 2022-2023 academic year, and thereafter, to complete at least one identified core course in each subject area as part of the general education course requirements (15 credit hours total) before a degree is awarded) The core subject areas include:

- Communication.
- Humanities.
- Mathematics.
- Natural Sciences.
- Social Sciences.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Animation and Game Art
Career Cluster: Arts A/V Technology and Communication

AS	
CIP Number	1610030400
Program Type	College Credit
Program Length	60 credit hours
CTSO	PBL
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts A/V Technology and Communication career cluster.

The purpose of this program is to teach students the fundamentals of Animation and Game Art as a viable career option. The program will also give students an opportunity to evaluate their potential as animators and game designers. Coursework covers all aspects of animation, character design, motion capture, production & editing, and various multi-media skills needed for success.

The content includes but is not limited to practical experiences in modeling and simulation conceptualization, design, storyboarding, development methodologies, essential programming techniques, prototype development, production processes and implementation challenges. Science, Computer Programming, Math, 2D and 3D Art are embedded throughout the program to emphasize the relationship between these areas and the field of Modeling and Simulation.

The content includes but is not limited to rendering three-dimensional forms into two-dimensional drawings, digital art and design, narrative storytelling, storyboarding, basic computer animation skills, 3D animation modeling, rendering and character animation, character design, development, rigging and animation, motion graphics, designing and implementing computer animation projects, and producing a 3D animated short film, Gaming and Animation, Robotics and/or Geospatial/Geographic Information Systems Technology.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 60 credit hours.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Render three-dimensional forms into two-dimensional drawings.
- 02.0 Demonstrate proficiency in digital art and design.
- 03.0 Demonstrate proficiency in developing and writing a story.
- 04.0 Demonstrate proficiency in storyboarding.
- 05.0 Demonstrate proficiency in basic computer animation skills.
- 06.0 Demonstrate proficiency in 3D animation modeling, rendering and character animation.
- 07.0 Demonstrate proficiency in character design, development, rigging and animation.
- 08.0 Demonstrate proficiency in motion graphics.
- 09.0 Demonstrate proficiency in designing and implementing computer animation projects.
- 10.0 Produce a 3D animated short film.

**Florida Department of Education
Student Performance Standards**

Program Title: Animation and Game Art
CIP Number: 1610030400
Program Length: 60 credit hours

At the completion of this program, the student will be able to:

01.0	Render three-dimensional forms into two-dimensional drawings. The student will be able to:
01.01	Define the elements of art as they relate to drawings.
01.02	Create solutions to assigned drawings problems directed to specific elements.
01.03	Describe the effects of specific drawings in critique discussion.
01.04	Define the principles of design related to drawing.
01.05	Identify and describe the key principles of scene composition.
01.06	Create solutions to assigned drawing problems as they relate to composition.
01.07	Observe and translating of three-dimensional live models into two-dimensional gesture drawings as quick and direct impressions of the subject.
01.08	Construct the figure starting from simple shapes to complex organic forms.
01.09	Draw parts of the figure in correct proportion.
01.10	Apply knowledge of skeletal, muscular, and surface anatomy.
01.11	Draw the figures in relation to mass and plane by using value and/or line.
01.12	Draw parts of the figure in relation to foreshortening and overlapping shapes.
01.13	Draw the figure as a three-dimensional rendering through light and shadow in developing value scale
01.14	Design characters and objects for animation based on the building blocks of drawing and design.
01.15	Explore historical and contemporary design styles and techniques.
01.16	Develop a wide range of character types, traits, mood, personalities, and attitudes for visually realizing an animated character.
01.17	Create model sheets.

02.0	Demonstrate proficiency in digital art and design. The student will be able to:
02.01	Define perspective in a composed scene.
02.02	Create a one, two, and three point perspective in a composition.
02.03	Create drawings that employ basic compositional devices, including focal point, balance, unity, scale, proportion, contrast, movement, variety, and dominance.
02.04	Acquire digital images utilizing hardware and software related to digital image acquisition.
02.05	Edit and recreate images.
02.06	Apply color management basics to enhance images.
02.07	Work with available tools like masking, layering, retouching, scanning to recreate, edit, or enhance acquired images.
02.08	Output the final image.
02.09	Identify design and color terminology, traditional and electronic.
02.10	Discuss the application of color theory to the graphic environment.
02.11	Analyze target audience preferences and cultural influences as they impact design decisions (e.g., various color responses based on gender, age, education, earning levels and culture).
02.12	Use software tools to express visual ideas digitally.
02.13	Create digital media from existing images and elements.
02.14	Create a digital image based on a descriptive narrative.
02.15	Utilize perspective as a tool to depict the illusion of three-dimensional space on a two-dimensional surface.
02.16	Translate and apply hand skill techniques into a digital environment.
02.17	Create a finished digital environment that exhibits sound composition and design principles.
03.0	Demonstrate proficiency in developing and writing a story. The student will be able to:
03.01	Define the 12 basic principles of animation.
03.02	Describe real-world movements and how to adapt them to the animation medium.
03.03	Define the timing and length of a movement or sequence.

03.04	Identify and discuss the key dynamic elements of storytelling in film, television and animation media.
03.05	Develop stories and write scripts for multi-media platform.
03.06	Create a screenplay in which structure, character development, dialogue, tone, and theme are incorporated and clearly demonstrated.
03.07	Compare and contrast the historical perspective of both traditional and computer animation.
03.08	Create and produce an animated sequence of events/movements.
03.09	Produce a breakdown dialogue and/or audio.
03.10	Animate interactions between characters and objects.
03.11	Develop a character, its physical attributes and environments and apply them onto moving or still backgrounds.
03.12	Animate images utilizing the concept of in betweening and including: charts and breakdown drawings, slowing in and slowing out, thirds, key points, superimposition, arcs, and tracebacks.
03.13	Characterize head turns and eye movements.
03.14	Create walks and runs to include: passing position, walk cycles, background pans, front on walks, animated and still backgrounds, adding arms and legs and feet, introducing personality, double bounces walk timing, anticipation, and exaggerated action.
03.15	Add realistic touch to include: weight in movement, anticipation and weight, flexibility, overlapping action, animated effects, such as wind, water, fire, and solid objects.
03.16	Create and design camera movements, pans and zooms.
03.17	Write and create all digital elements of an original story.
03.18	Insert audio, music and sound effects.
03.19	Perform final edit to include color correction, and adding titles and credits.
03.20	Render the final product.
04.0	Demonstrate proficiency in storyboarding. The student will be able to:
04.01	Translate gestures and emotions into still digital images.
04.02	Create logical sequences to portray a character's emotional state.
04.03	Create logical sequencing to portray continuity.
04.04	Add character, object and background, and movement indicators to specify actions.

04.05	Portray different camera angles.
04.06	Indicate movement of the camera throughout the sequences.
04.07	Indicate camera cuts and scene transitions.
04.08	Pair dialogue with digital images.
04.09	Write the actions of each board to complement the digital images.
04.10	Indicate placement of sound effects and original music.
05.0	Demonstrate proficiency in basic computer animation skills. The student will be able to:
05.01	Create geometric utilizing points, vectors and polygons and curves.
05.02	Discuss the application of Open GL and how pixels, light and RGB colors are displayed on a computer screen.
05.03	Manipulate objects quickly in perspective, top, side and front views simultaneously.
05.04	Utilize primitive shapes to model 3D forms.
05.05	Describe the difference between polygons and sub-division surfaces and apply these techniques to create 3D forms.
05.06	Use a 3D polygonal modeling toolset (extrude, lattices etc.) to create 3D forms.
05.07	Manipulate points, vertices, edges and faces to create 3D forms.
05.08	Create and use loft, planar, lathe and other Polygon and Subdivision surfaces surface tools.
05.09	Create complex geometric forms from curves.
05.10	Convert curves into polygons and a variety of other objects.
05.11	Create a digital 3D object from a sketch.
05.12	Discuss different types of techniques available to apply textures to geometry and how light interplays with a computer surface.
05.13	Describe how Open GL (high performance graphics) displays works with texture mapping and gaming.
05.14	Describe the differences between various rendering engines (e.g., Arnold, Renderman and V-Ray).
05.15	Create 3D cameras to produce depth of field, motion blur and exposure effects.
06.0	Demonstrate proficiency in 3D animation modeling, rendering and character animation. The student will be able to:

06.01	Model geometry and create objects in a 3D environment, based on a 2D render.
06.02	Utilize Mesh Topology at different mesh resolutions.
06.03	Distinguish between visemes, animation keys, and graph.
06.04	Use visemes, animation keys and graph editors to create realistic lip-synced animations.
06.05	Create blend shapes.
06.06	Add voice and sounds to animated characters.
06.07	Interpolate the finished model into a 3D software application.
06.08	Create a working character rig for animation.
06.09	Outline the process of binding objects using smooth and rigid binding tools.
06.10	Create the skeleton rig to work with mesh deformers.
06.11	Bind the skeleton through the process of painting weights to influence geometry.
06.12	Use lighting setups to convey mood, story, and feeling.
06.13	Apply techniques of global illumination and ambient occlusion to light the scene.
06.14	Work with distributed renderings and render passes.
07.0	Demonstrate proficiency in character design, modeling, rigging and animation. The student will be able to:
07.01	Plan the work flow and troubleshoot challenges and issues with the software.
07.02	Present concepts of work and character model sheets in a professional manner.
07.03	Model a highly detailed character in ZBrush.
07.04	Create and modeling a highly detailed environment.
07.05	Create highly realistic texture maps (hair, fur).
07.06	Rig the character using Maya muscle and cloth dynamic caches.
07.07	Match realistic lighting and 3D lighting.
07.08	Work with motion control cameras to recreate camera moves with live action actor/actress.

07.09	Work in teams to perfect live action shots.
07.10	Utilize Maya live and Apply 3D points to track and recreate 3D camera moves.
07.11	Submit jobs to the render farm and playing the role of render wrangler.
07.12	Work with different render passes and layers for color correction.
07.13	Composite a green screen scene and CGI elements together.
07.14	Create a highly detailed character mesh suitable for rigging in a 3D application.
08.0	Demonstrate proficiency in motion graphics. The student will be able to:
08.01	Create new compositions.
08.02	Work with layers in a project.
08.03	Animate elements through the use of keyframes.
08.04	Utilize default effects available with the software.
08.05	Move objects and elements in 3D space.
08.06	Import footage into compositions.
08.07	Pre-compose composition elements in one composition.
08.08	Re-link missing footage.
08.09	Import Photoshop documents and Illustrator files.
08.10	Create typestyles and fonts.
08.11	Create layer solids and shapes with masks.
08.12	Build shape layers.
08.13	Utilize switches and blend modes to alter output.
08.14	Craft custom shapes and masks.
08.15	Create variable-width feathered masks.
08.16	Rotoscope and refine with the roto brush.

08.17	Control animation with parenting and the pick whip.
08.18	Create animation paths.
08.19	Time animation to audio.
08.20	Trim and sliding edits.
08.21	Swap images in the timeline.
08.22	Layer multiple effects.
08.23	Generate graphic effects with adjustment layers.
08.24	Build backgrounds with effects.
09.0	Demonstrate proficiency in designing and implementing computer animation projects. The student will be able to:
09.01	Explain the components that compose the story.
09.02	Define the storytelling structure and character styles.
09.03	Create a theme that balances realism with imagination.
09.04	Choose an industry genre.
09.05	Create structure and pacing.
09.06	Develop a consistent character for the story.
09.07	Correlate the appropriate style and story.
09.08	Create and develop moods.
09.09	Create character and background connections.
09.10	Construct and planning scenes.
09.11	Use the mechanics of storyboarding.
09.12	Incorporate diagram panels and numbering.
09.13	Create a production pipeline and analyze a budget.
09.14	Schedule the project production.

09.15	Organize assets.
09.16	Write and record vocal tracks.
09.17	Create exposure sheets.
09.18	Create 2D animatics.
09.19	Assemble scene shots.
10.0	Produce a short 3D animated film. The student will be able to:
10.01	Build a 3D animatics.
10.02	Set up the stage.
10.03	Create object and character movement.
10.04	Manipulate camera direction.
10.05	Compile reference material.
10.06	Create Draws and sculptures.
10.07	Choose modeling techniques.
10.08	Create necessary blend shapes.
10.09	Assign materials to geometry.
10.10	Choose material types.
10.11	Create original textures.
10.12	Create background plates.
10.13	Rig the character.
10.14	Bind the character.
10.15	Create facial systems for the character.
10.16	Set up secondary characters and secondary objects.
10.17	Define and choosing animation styles.

10.18	Block the scenes to be animated.
10.19	Create dope sheets for the project.
10.20	Animate a character.
10.21	Apply forward kinematics and inverse kinematics.
10.22	Animate facial expressions.
10.23	Choose appropriate lighting attributes for the scene.
10.24	Choose natural versus artificial lighting.
10.25	Apply shadows to characters and objects.
10.26	Choose from available lighting techniques.
10.27	Render the scenes.
10.28	Create a lighting and rendering production workflow.
10.29	Applying UV mapping techniques.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

General Education Course Requirements for AS and AAS Degrees

State Board of Education Rule 6A-14.030(4), F.A.C., identifies 15 credit hours as the minimum amount of general education coursework required in the Associate of Science (AS) degree and the Associate of Applied Science (AAS) degree. In addition, Rule 6A-14.0303, F.A.C., implements s. 1007.25, F.S., and requires students entering a technical education degree program in the 2022-2023 academic year, and thereafter, to complete at least one identified core course in each subject area as part of the general education course requirements (15 credit hours total) before a degree is awarded) The core subject areas include:

- Communication.
- Humanities.
- Mathematics.
- Natural Sciences.
- Social Sciences.

Career and Technical Student Organization (CTSO)

Phi Beta Lambda (PBL) is the co-curricular career and technical student organization providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Media/Multimedia Technology
Career Cluster: Arts A/V Technology and Communication

AS	
CIP Number	1611080103
Program Type	College Credit
Program Length	60 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for initial employment in the following professions: digital media/multimedia programmer, digital media/multimedia project manager, web designer/web developer/web production artist, audio visual technician/audio technician, lighting technician, graphic animator, graphic designer, videographer/editor, video engineer, digital media/multimedia producer, technical director, instructional designer or interface designer. This program may also be used to provide supplemental training for persons previously or currently employed in these occupations.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts A/V Technology and Communication career cluster.

The content should include, but not be limited to, the learning of management skills permitting the graduate to oversee the operation of institutional and industrial multiple media operations. Instruction includes: use of multimedia hardware and software, production analysis, the design and production of digital media/multimedia projects, digital media/multimedia management and the application of production skills to solving the problems relating to the integration of multiple media. Also included are skills relating to professionalism, employability, communication, and management.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the Digital Media/Multimedia industry: planning, management, finance, technical and product skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 60 credit hours.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Use industry standard digital media/multimedia hardware and software.
- 02.0 Create, alter and/or adjust presentations utilizing a variety of digital media/multimedia technologies.
- 03.0 Design and generate still imagery/graphics.
- 04.0 Design and generate video and/or animations in multimedia project(s).
- 05.0 Utilize/create/produce audio technology for digital media/multimedia project(s).
- 06.0 Use computer applications for digital media/multimedia projects.
- 07.0 Produce digital media/multimedia projects.
- 08.0 Demonstrate appropriate communication skills.
- 09.0 Demonstrate appropriate math skills.
- 10.0 Demonstrate employability and entrepreneurial skills.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Media/Multimedia Technology
CIP Numbers: 1611080103
Program Length: 60 credit hours

At the completion of this program, the student will be able to:

01.0	Use industry standard digital media/multimedia hardware and software. The student will be able to:
01.01	Demonstrate the proper care and handling of equipment used in digital media/multimedia.
01.02	Perform pre- and post-production routines with digital media/multimedia hardware and software.
01.03	Familiarize with industry standard equipment and software.
02.0	Create, alter and/or adjust presentations utilizing a variety of digital media/multimedia technologies. The student will be able to:
02.01	Analyze the strengths and weaknesses of presentational media.
02.02	Demonstrate the ability to locate appropriate production resources.
02.03	Utilize production techniques to create industry standard outcomes.
02.04	Adapt learned skills and generate new approaches in order to solve unique production problems.
03.0	Design and generate still imagery/graphics. The student will be able to:
03.01	Capture, manipulate and apply a still imagery/graphics in digital media/multimedia projects.
03.02	Differentiate and optimize still image formats.
03.03	Apply elements of design, principles of composition and qualities of light to still images/graphics in a digital media/multimedia projects.
03.04	Understand the properties of light and how to utilize them in still images/graphics.
03.05	Integrate the use of photographic special effects for digital media/multimedia projects.
03.06	Evaluate photographic quality using appropriate applications.
04.0	Design and generate video and/or animations in multimedia project(s). The student will be able to:
04.01	Capture, manipulate and apply a video and/or animation image in digital media/multimedia projects.

04.02	Differentiate and optimize video and/or animation formats.
04.03	Apply elements of design, principles of composition and qualities of light to video and/or animation in digital media/multimedia projects.
04.04	Integrate the use of video special effects into digital media/multimedia projects.
04.05	Evaluate moving image quality using appropriate application standards.
04.06	Shoot and edit video or create animation to production specifications.
04.07	Understand light and how to utilize/measure properties, intensity and color.
05.0	Utilize/create/produce audio technology for digital media/multimedia project(s). The student will be able to:
05.01	Capture, manipulate and apply audio and sound in digital media/multimedia projects.
05.02	Differentiate and optimize formats for audio.
05.03	Evaluate production needs for microphones.
05.04	Demonstrate proficiency with a multi-channel audio mixing.
05.05	Utilize industry standards for multi-track recording.
05.06	Understand copyright laws as they apply to prerecorded materials.
06.0	Use computer applications for digital media/multimedia projects. The student will be able to:
06.01	Demonstrate a basic proficiency with digital media/multimedia software packages.
06.02	Design and produce digital media/multimedia content.
06.03	Test, edit and de-bug digital media/multimedia content.
06.04	Present digital media/multimedia content.
07.0	Produce digital media/multimedia projects. The student will be able to:
07.01	Assess the needs of the end user or client.
07.02	Analyze available resources.
07.03	Select and apply appropriate media.
07.04	Create the written form of a story/script appropriate to the digital media/multimedia projects.

07.05	Create and prepare a storyboard(s) appropriate to the digital media/multimedia projects.
07.06	Design navigational structure for interactive environments.
07.07	Organize resources and personnel to implement production.
07.08	Evaluate the quality and end user application of finished project.
07.09	Utilize appropriate programming and scripting languages to create interactive digital media/multimedia projects.
08.0	Demonstrate appropriate communication skills. The student will be able to:
08.01	Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
08.02	Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
08.03	Read and follow written and oral instructions.
08.04	Answer and ask questions coherently and concisely.
08.05	Read critically by recognizing assumptions and implications and by evaluating ideas.
08.06	Demonstrate appropriate presentation skills.
09.0	Demonstrate appropriate math skills. The student will be able to:
09.01	Solve problems for volume, weight, area, circumference, proportions, and perimeter measurements for rectangles, squares, and cylinders.
09.02	Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
09.03	Determine production cost and personnel value.
10.0	Demonstrate employability and entrepreneurial skills. The student will be able to:
10.01	Create and write a résumé and cover letter.
10.02	Prepare and develop a portfolio, to be presented in appropriate format.
10.03	Identify acceptable work habits.
10.04	Demonstrate competence in job interview techniques.
10.05	Formulate strategy for job search, employment and career after graduation.
10.06	Understand self-employment and business startup strategies.

Additional Information

Laboratory Activities

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Certificate Programs

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates (CCC):

- Digital Media/Multimedia Authoring (0609070209) - 12 credit hours
- Digital Media/Multimedia Instructional Technology (0609070211) - 15 credit hours
- Digital Media/Multimedia Presentation (0609070219) - 17 credit hours
- Digital Media/Multimedia Production (0610010507) - 15 credit hours
- Digital Media/Multimedia Video Production (0609070210) - 12 credit hours
- Digital Media/Multimedia Web Production (0650010208) - 15 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education
Curriculum Framework**

Program Title: Graphics Technology
Career Cluster: Arts, A/V Technology and Communications

AS	
CIP Number	1611080300
Program Type	College Credit
Program Length	64 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and the relevant technical knowledge and skills needed to prepare for further education and such careers as Broadcast Designer, Production Artist, Illustrator, Publication Designer, Graphic Designer, Production Manager, Presentation Specialist, User Interface Designer, User Experience Designer, Information Architect, or Web Designer in the Arts, A/V Technology and Communications career cluster; provides technical skill proficiency; includes competency-based applied learning that contributes to academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communications career cluster.

The content includes, but is not limited to, communication skills, team skills, human relations and employability skills, safe and efficient work practices, illustration, front-end web development, concept formulation, design, drawing, design display/exhibit, layout, production skills, printing processes, use of industry tools and equipment, use and care of materials, use of current industry standards/practices/techniques, typography, photographic procedures, color theories, marketing/advertising concepts, TV graphics, web design, user interface design, information architecture, electronic content, and portfolio development.

Programs may include specialization in animation, interactive/multimedia design, graphic arts, graphic design, web design, user interface design, information architecture, environmental graphics, motion graphics, or 3-D design.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 64 credit hours.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate effective interpersonal communication skills.
- 02.0 Demonstrate the ability to collaborate with others.
- 03.0 Demonstrate safe and efficient work practices.
- 04.0 Create raster-based and vector-based visual solutions.
- 05.0 Formulate concepts/theories.
- 06.0 Apply design and color theories.
- 07.0 Demonstrate drawing techniques.
- 08.0 Demonstrate technical and creative uses of typography.
- 09.0 Create advertising design solutions.
- 10.0 Demonstrate production skills in web and print design.
- 11.0 Interpret printing processes.
- 12.0 Demonstrate knowledge of current industry standards, practices, and techniques.
- 13.0 Apply marketing/advertising principles for effective visual communication.
- 14.0 Demonstrate industry-level presentation techniques.
- 15.0 Utilize computer hardware, software, networks and peripherals for the production of electronic content.
- 16.0 Create electronic interfaces.
- 17.0 Demonstrate appropriate math skills.
- 18.0 Demonstrate appropriate understanding of basic science and logic.
- 19.0 Demonstrate employability skills.
- 20.0 Demonstrate an understanding of entrepreneurship.
- 21.0 Demonstrate appropriate usage of electronic media for self-promotion.

**Florida Department of Education
Student Performance Standards**

Program Title: Graphics Technology
CIP Numbers: 1611080300
Program Length: 64 credit hours

At the completion of this program, the student will be able to:

01.0 Demonstrate effective interpersonal communication skills. The student will be able to:

01.01 Read and interpret written and oral instructions.

01.02 Prepare written correspondence.

01.03 Demonstrate effective oral communication and presentation skills.

01.04 Present work to an audience.

02.0 Demonstrate the ability to collaborate with others. The student will be able to:

02.01 Demonstrate project management abilities.

02.02 Demonstrate the ability to work as part of a team.

03.0 Demonstrate safe and efficient work practices. The student will be able to:

03.01 Follow industry rules, safety procedures and policies.

03.02 Demonstrate proper handling and use of toxic materials.

03.03 Demonstrate awareness of appropriate ergonomics.

03.04 Demonstrate proper care of equipment.

03.05 Perform typical workplace tasks in a timely manner.

04.0 Create raster-based and vector-based visual solutions. The student will be able to:

04.01 Demonstrate versatile styles and techniques to solve visual problems.

04.02 Demonstrate knowledge of methods and materials.

04.03 Recognize and recommend appropriate raster-based and vector-based styles and techniques.

04.04	Apply design fundamentals to raster-based and vector-based solutions to effectively achieve a visual communication goal.
04.05	Execute raster and vector solutions in accordance with industry technical requirements for print and/or digital formats.
05.0	Formulate concepts/theories. The student will be able to:
05.01	Solve problems by selecting the appropriate styles or techniques.
05.02	Display creative talent and ingenuity.
05.03	Apply principles of design.
05.04	Demonstrate the design process.
06.0	Apply design and color theories. The student will be able to:
06.01	Create a design utilizing the appropriate technical color application for the intended output.
06.02	Create mockups, dummies, and comprehensive layouts in a variety of formats.
06.03	Evaluate the use of design principles for a variety of graphic design applications.
06.04	Select and apply appropriate design principles for effective visual communication.
06.05	Apply knowledge of color theory to design solutions.
06.06	Develop solutions for interactive media that demonstrate awareness of the user experience.
07.0	Demonstrate drawing techniques. The student will be able to:
07.01	Draw three-dimensional shapes.
07.02	Draw still life.
07.03	Draw figures.
07.04	Demonstrate the use of perspective.
07.05	Identify artwork and artists of historical significance.
08.0	Demonstrate technical and creative uses of typography. The student will be able to:
08.01	Develop and demonstrate appropriate use of type styles and letter forms.
08.02	Demonstrate application of typographical specifications.

08.03	Apply type construction design.
08.04	Apply correct lettering and line spacing for typesetting.
08.05	Develop a working knowledge of type spacing.
08.06	Demonstrate the principles of typography in a design project.
08.07	Utilize a desktop computer and industry standard software for type production.
08.08	Develop and properly utilize a typographic grid.
09.0	Create advertising design solutions. The student will be able to:
09.01	Identify advertising needs and develop appropriate solutions.
09.02	Produce comprehensive layouts for advertising in a variety of print, packaging, outdoor, and electronic formats.
10.0	Demonstrate production skills in web and print design. The student will be able to:
10.01	Size photographs and illustrations.
10.02	Demonstrate correct preparation of electronic files for various printed and electronic outputs.
10.03	Utilize appropriate industry-standard software to execute design solutions.
11.0	Interpret printing processes. The student will be able to:
11.01	Determine methods of printing; include specialized printing methods.
11.02	Select appropriate substrates and inks for projects.
11.03	Explain color separation processes.
11.04	Identify and specify half-tone and line negatives.
11.05	Interpret signature and imposition procedures.
11.06	Analyze and identify methods of proofing.
11.07	Explain basic print processes.
11.08	Understand how various printing processes require different electronic pre-press techniques.
12.0	Demonstrate knowledge of current industry standards, practices, and techniques. The student will be able to:

12.01	Explain copyright procedures.
12.02	Use industry terminology.
12.03	Identify industry practices and procedures.
12.04	Explain the importance of meeting deadlines.
12.05	Acquire and utilize up-to-date in-field technology.
12.06	Learn how to cope with stress.
12.07	Demonstrate the ability to adjust to work conditions.
12.08	Understand the importance of the efficient and timely execution of processes.
12.09	Apply usability and accessibility standards to digital content.
13.0	Apply marketing/advertising principles for effective visual communication. The student will be able to:
13.01	Apply marketing/advertising principles.
13.02	Identify customer needs.
13.03	Identify the target audience.
13.04	Develop solutions that demonstrate cost-awareness.
13.05	Analyze marketing potential.
13.06	Recognize the appropriate use of specialty services (supplies, specialties).
13.07	Identify the client's marketing objective(s).
13.08	Identify the client's advertising objective(s).
13.09	Understand an advertising agency's structure and procedures.
13.10	Develop visual solutions that focus on the communication goals of the client and/or target audience.
14.0	Demonstrate industry-level presentation techniques. The student will be able to:
14.01	Demonstrate mounting and matting procedures.
14.02	Demonstrate industry presentation procedures and techniques.

14.03	Prepare an industry-level professional portfolio appropriate for the type of work created.
14.04	Prepare print-based and electronic presentations appropriate to the output of the work.
14.05	Prepare industry-level self-promotion materials.
15.0	Utilize computer hardware, software, networks, and peripherals for the production of electronic content. The student will be able to:
15.01	Demonstrate an understanding of platforms, operating systems, coding languages, hardware, software, peripherals, network issues, and compatibility.
15.02	Demonstrate knowledge of industry-standard front-end coding languages.
15.03	Select and apply the appropriate coding language(s) to execute electronically published design solutions.
15.04	Develop electronic content with cross-browser capability.
15.05	Implement solutions with regard to search engine optimization (SEO).
16.0	Create electronic interfaces. The student will be able to:
16.01	Create vector-based or raster-based layouts that appropriately translate to a variety of electronic formats.
16.02	Create interactive content for websites.
16.03	Utilize industry-related software and coding languages to build electronic content.
16.04	Apply information architecture, user interface, and user experience principles to create visual solutions for electronic formats.
17.0	Demonstrate appropriate math skills. The student will be able to:
17.01	Measure using millimeters, centimeters, feet, inches, points, picas, pixels, and ems.
17.02	Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
17.03	Determine the correct purchase price, to include sales tax, for a materials list containing a minimum of six items.
17.04	Understand and demonstrate the ability to compute federal, state and local taxes.
17.05	Convert fractions to decimals.
17.06	Understand and apply ratio concepts to work that must be translated into multiple formats/sizes.
17.07	Establish x and y positions.
17.08	Solve geometric problems for three-dimensional (3D) work.

17.09	Apply a basic understanding of percentages for scaling artwork and executing layouts for responsive electronic content.
18.0	Demonstrate appropriate understanding of basic science and logic. The student will be able to:
18.01	Understand the effects of temperature extremes, chemical reactions, and moisture content on industry-related materials.
18.02	Draw conclusions or make inferences from data.
18.03	Identify health-related problems that may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.
18.04	Apply basic programming concepts for front-end web development.
18.05	Demonstrate knowledge of the operators, variables, data types, objects, properties, and methods.
18.06	Demonstrate familiarity with control structures (e.g., objects, functions, conditional statements, arrays, loops, expressions) for front-end web development.
18.07	Understand forms and regular expression validation and data submission for front-end web development.
18.08	Demonstrate knowledge of how to apply logical operators and conditional statements (if/then, if/else) for front-end web development.
18.09	Demonstrate a basic ability to measure the effectiveness of solutions and outcomes.
19.0	Demonstrate employability skills. The student will be able to:
19.01	Create a résumé.
19.02	Conduct a job search.
19.03	Secure information about a job.
19.04	Identify documents that may be required when applying for a job interview.
19.05	Complete a job application form correctly.
19.06	Demonstrate competence in job interview techniques.
19.07	Identify or demonstrate appropriate responses to criticism from an employer, supervisor, coworkers, and customers.
19.08	Identify acceptable work habits.
19.09	Demonstrate knowledge of how to make appropriate job changes.
19.10	Demonstrate acceptable employee health habits.

19.11	Demonstrate knowledge of the Federal Hazard Communication regulation (29 CFR 1910.1200).
19.12	Produce and present a finished portfolio.
19.13	Understand and demonstrate self-promotion skills.
19.14	Effectively use electronic media to promote and control self-branding.
20.0	Demonstrate an understanding of entrepreneurship. The student will be able to:
20.01	Define <i>entrepreneurship</i> .
20.02	Describe the importance of entrepreneurship to the American economy.
20.03	List the advantages and disadvantages of business ownership.
20.04	Identify the risks involved in ownership of a business.
20.05	Identify the necessary personal characteristics of a successful entrepreneur.
20.06	Identify the business skills needed to operate a small business efficiently and effectively.
20.07	Understand the challenges associated with a sole proprietorship.
21.0	Demonstration appropriate usage of electronic media for self-promotion. The student will be able to:
21.01	Demonstrate knowledge of and the ability to use electronic media.
21.02	Identify the technological uses of various forms of electronic media.
21.03	Utilize technology for various forms of electronic media.
21.04	Update posts and use Internet resources for sharing work and self-promotion.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

General Education Course Requirements for AS and AAS Degrees

State Board of Education Rule 6A-14.030(4), F.A.C., identifies 15 credit hours as the minimum amount of general education coursework required in the Associate of Science (AS) degree and the Associate of Applied Science (AAS) degree. In addition, Rule 6A-14.0303, F.A.C., implements s. 1007.25, F.S., and requires students entering a technical education degree program in the 2022-2023 academic year, and thereafter, to complete at least one identified core course in each subject area as part of the general education course requirements (15 credit hours total) before a degree is awarded) The core subject areas include:

- Communication.
- Humanities.
- Mathematics.
- Natural Sciences.
- Social Sciences.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Certificate Programs

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates (CCC):

- Graphic Design Production (0611080303) – 24 credit hours
- Graphic Design Support (0611080302) – 15 credit hours
- Interactive Media Production (0611080304) – 24 credit hours
- Interactive Media Support (0611080305) – 15 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education
Curriculum Framework**

Program Title: Telecommunications Engineering Technology
Career Cluster: Arts, A/V Technology and Communication

AS	
CIP Number	1615030302
Program Type	College Credit
Program Length	64 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program is designed to prepare students for employment as communications engineering technicians, television technicians, analysis technicians, 2-way cellular wireless technicians, network technicians, network operations specialists, product specialists, I.P. (Internet Protocol) engineers, technical salespersons, field engineers, field technicians, transmission engineers, technical support salespersons, installer/repair technicians, network engineers, or in related occupations. This program may also provide supplemental training to persons previously or currently employed in these occupations.

This specialization content includes, but is not limited to, basic electronics skills, transmission and distribution systems, telephony communication systems, digital communications, data communications and network communications.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the Telecommunication Engineering industry: planning, management, finance, technical and product skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 64 credit hours.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of basic electronics.
- 02.0 Demonstrate proficiency in basic operation and application of transmitters, receivers, and transmission and distribution systems.
- 03.0 Demonstrate proficiency in design and analysis of digital communications systems.
- 04.0 Demonstrate proficiency in the analysis of transmission and distribution systems.
- 05.0 Demonstrate proficiency in network communications.
- 06.0 Demonstrate proficiency in the analysis of telephony communication systems.
- 07.0 Demonstrate proficiency in the analysis of analog and digital video systems.

**Florida Department of Education
Student Performance Standards**

Program Title: Telecommunications Engineering Technology
CIP Number: 1615030302
Program Length: 64 credit hours

At the completion of this program, the student will be able to:

01.0 Demonstrate knowledge of basic electronics. The student will be able to:

01.01 Perform various types of soldering.

01.02 Perform various types of wiring and cable terminations.

01.03 Demonstrate knowledge of AC/DC concepts and applications.

01.04 Demonstrate knowledge of computer systems and basic applications.

01.05 Demonstrate use of basic test and measurement equipment.

01.06 Understand and demonstrate safety rules.

01.07 Demonstrate understanding of digital fundamentals.

02.0 Demonstrate proficiency in basic operation and application of transmitters, receivers, and transmission and distribution systems. The student will be able to:

02.01 Describe the principles and operation of amplitude modulation and frequency modulation.

02.02 Demonstrate understanding of block diagrams and components of transmitter receiver circuits including mixers, IF amplifiers, local oscillators, modulators and demodulators.

02.03 Identify, measure, analyze and troubleshoot AM and FM transmitter/receiver circuits including mixers, IF amplifiers, local oscillators, modulators, demodulators and speech amplifiers.

02.04 Analyze, troubleshoot, and maintain transmitters and receivers, to include heterodyning, frequency synthesis, phase-locked-loop, filtering and automatic control circuits.

02.05 Analyze, troubleshoot and adjust RF power amplifier circuits.

02.06 Describe the operation of Double Side Band (DSB) and Single Side Band (SSB) radio systems.

02.07 Identify the stages of SSB and DSB transmitter and receiver circuits.

02.08 Design, analyze and troubleshoot SSB and DSB transmitter and receiver circuits.

02.09	Conduct operating system checks and make minor adjustments to SSB and DSB transmitters and receivers.
02.10	Analyze and test AM, SSB and DSB radio circuits using spectrum analyzers, noise analyzers, impedance meters, sweep generators, distortion meters and power meters.
02.11	Analyze, adjust and troubleshoot Phase Modulation (PM) circuits.
02.12	Analyze, adjust and troubleshoot FM transceiver circuits.
02.13	Test, adjust and align transmitters and receivers using the spectrum analyzer, sweep generator, noise analyzer, frequency meter, modulation meter, Impedance Bridge and power meter.
02.14	Describe the components and concepts of transmission systems: antennas, fiber optics, coax, copper, microwave, satellite, feed lines, and wave guides.
02.15	Calculate transmission line characteristics and understand impedance matching.
02.16	Analyze and describe the concepts of radio wave propagation and radiation fields.
02.17	Test, set up and adjust antenna systems using a power meter, network analyzer, and SWR meter.
02.18	Describe government rules, regulations, and permits.
03.0	Demonstrate proficiency in design and analysis of digital communication systems. The student will be able to:
03.01	Describe digital modulation techniques and systems.
03.02	Describe industry standards in digital communications.
03.03	Analyze, measure, and troubleshoot digital modulation systems.
03.04	Perform specific test and measurement as related to the digital devices and equipment.
03.05	Analyze and evaluate the operation of programmable digital filters.
03.06	Describe the operation and application of compression amplifiers.
03.07	Analyze and describe the operation of compander circuits.
03.08	Describe and analyze the operation of a sample and hold circuit.
03.09	Describe the conversion of analog signals into a digital format.
03.10	Describe and analyze the operation of Pulse Code Modulation (PCM) circuits.
03.11	Describe, analyze and evaluate the operation of a Coder/Decoder (CODEC) IC circuit.

03.12	Describe, analyze and evaluate the operation of a continuously variable slope delta modulation circuit.
04.0	Demonstrate proficiency in the analysis of transmission and distribution systems. The student will be able to:
04.01	Analyze and demonstrate the application of optical electronic devices in power control circuits and in analog, digital and data communication circuits.
04.02	Analyze and demonstrate the operation of optical devices.
04.03	Splice and terminate cabling systems.
04.04	Test and evaluate modulators and demodulators.
04.05	Analyze and demonstrate multiplex transmission including use of full and half duplex communications.
04.06	Describe gain and loss concepts as applied to transmission and distribution systems.
04.07	Describe the fundamental concepts of satellite communications.
04.08	Operate satellite communication systems.
04.09	Operate multiplexed data telemetry systems.
04.10	Analyze the theoretical concepts that define antenna equivalent circuits and couplers.
04.11	Perform and analyze the calculations required to evaluate the effectiveness of antennas.
05.0	Demonstrate proficiency in network communications. The student will be able to:
05.01	Describe the layers of a communications system.
05.02	Describe the protocol requirements necessary to ensure the transmission of a data message.
05.03	Describe, from a system standpoint, the characteristics of serial communications standards.
05.04	Analyze and troubleshoot communications between computers.
05.05	Compare serial communications with parallel and other standards.
05.06	Describe, analyze, troubleshoot and demonstrate the operation of network access devices.
05.07	Demonstrate use of network management system.
05.08	Identify the capabilities of a telephone circuit on a data communications system.
05.09	Describe LAN topologies as applied to data networks.

05.10	Design, connect and troubleshoot a Local Area Network (LAN).
05.11	Describe WAN topologies as applied to data networks.
05.12	Design, connect and troubleshoot a Wide Area Network (WAN).
05.13	Describe wireless topologies as applied to data networks.
05.14	Design, connect and troubleshoot a wireless network.
05.15	Fabricate and test LAN cabling.
05.16	Describe the operation of a short-range wireless network (i.e., Blue Tooth, IEEE802.11).
05.17	Describe the operation of a long-range wireless network (i.e., PCS, digital messaging, 3G Technology).
05.18	Describe the operation of a cellular communications network.
05.19	Describe and analyze error detection and correction methods used in data communication systems.
05.20	Describe basic data firewalls, encryption and decryption methods.
05.21	Demonstrate understanding of compression and decompression.
05.22	Describe the general characteristics and operations of frame relay, DSL, and ISDN as they apply to data networks.
05.23	Describe the characteristics of frame relay network management.
05.24	Describe the general characteristics and operations of routers and switches as they apply to data networks and systems.
05.25	Describe the general characteristics and design capabilities of the T-carrier system.
05.26	Analyze the network design criteria of T-1 systems.
05.27	Describe the general characteristics and design capabilities of the Synchronous Optical Network (SONET).
05.28	Describe the characteristics and design capabilities of the Asynchronous Transfer Mode (ATM) network.
05.29	Describe the characteristics of high-speed public data networks.
05.30	Apply the theory of wide area network design to systems.
06.0	Demonstrate proficiency in the analysis of telephony communication systems. The student will be able to:
06.01	Describe the general characteristics of a telephone subscriber loop.

06.02	Describe, demonstrate and analyze the operation of tone dialing, DTMF (Dual Tone Multi Frequency), pulse dialing and ringing circuits.
06.03	Describe, evaluate and analyze the operation of a MODEM in the originate and answer modes.
06.04	Describe the various functions of a BORSCHT (Battery Overload Ring Supervision Coding Hybrid Test) circuit.
06.05	Describe, evaluate and analyze the operation of a Subscriber Loop Interface Circuit (SLIC).
06.06	Describe, evaluate and analyze the operation of a Time-Slot Assignment Circuit (TSAC).
06.07	Describe and evaluate the application of fiber optic systems to telecommunications.
06.08	Analyze and describe applications of speech synthesis and recognition circuits to telecommunications.
06.09	Terminate and test telephony cable.
06.10	Describe the operation of an integrated voice and data system.
07.0	Demonstrate proficiency in the analysis of analog and digital video systems. The student will be able to:
07.01	Describe the fundamental principles and concepts of television/video systems.
07.02	Describe the operation of the key components of a television/video system.
07.03	Describe the principles of NTSC and HDTV video signals.
07.04	Analyze and describe the operation of the various sections of a DTV transmitter.
07.05	Analyze and describe the characteristics of the television signal (analog, digital, RF).
07.06	Describe and analyze the operation of the various sections of an NTSC and DTV receiver.
07.07	Analyze and describe the operation of encoders and decoders.
07.08	Assemble and test cables and connectors related to video/audio systems.
07.09	Demonstrate proficiency in the use of video and audio test equipment.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

General Education Course Requirements for AS and AAS Degrees

State Board of Education Rule 6A-14.030(4), F.A.C., identifies 15 credit hours as the minimum amount of general education coursework required in the Associate of Science (AS) degree and the Associate of Applied Science (AAS) degree. In addition, Rule 6A-14.0303, F.A.C., implements s. 1007.25, F.S., and requires students entering a technical education degree program in the 2022-2023 academic year, and thereafter, to complete at least one identified core course in each subject area as part of the general education course requirements (15 credit hours total) before a degree is awarded) The core subject areas include:

- Communication.
- Humanities.
- Mathematics.
- Natural Sciences.
- Social Sciences.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Certificate Programs

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates (CCC):

- Cable Installation (0647010304) – 12 credit hours
- Network Communications (LAN) (0611100206) – 18 credit hours
- Network Communications (WAN) (0611100207) – 18 credit hours
- Television System Support (0647010303) – 24 credit hours
- Wireless Communications (0615030508) – 18 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education
Curriculum Framework**

Program Title: Interactive Media Production Technology
Career Cluster: Arts, A/V Technology and Communication

AS	
CIP Number	1650010200
Program Type	College Credit
Program Length	60 credit hours
CTSO	Skills USA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment as media, multimedia, and interactive media editors and producers. In the program, students will combine skills in critical thinking, writing, photography, video, audio, social media, web creation/design and analytics to produce both traditional and multimedia interactive media productions.

The course includes the following: basic and creative writing for media, digital content creation including, photography, video, sound and interactive design.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the media production industry; audience analysis and estimation, media literacy, interpersonal and business communications, employability skills, portfolio development, community and multicultural sensitivity and environmental issues.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 60 credit hours.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Evaluate audience feedback and analytics of multi-media projects.
- 02.0 During the planning process for elements of multi-media projects, critically evaluate relevant information and assets for target audiences.
- 03.0 Demonstrate competency in photography for media.
- 04.0 Demonstrate competency in video pre-production, production and video post-production.
- 05.0 Demonstrate competency in sound recording and creation for media.
- 06.0 Demonstrate competency in design principles.
- 07.0 Demonstrate competency in interactive design.
- 08.0 Demonstrate competency in writing for media.
- 09.0 Demonstrate professional interpersonal and business communication skills in a diverse environment.
- 10.0 Create finished multi-media project incorporating multiple forms of media.

**Florida Department of Education
Student Performance Standards**

Program Title: Interactive Media Production Technology
CIP Number: 1650010200
Program Length: 60 credit hours

At the completion of this program, the student will be able to:

01.0	Evaluate audience feedback and analytics of multi-media projects. The student will be able to:
01.01	Apply effective interactive design across platforms.
01.02	Critically analyze the historical dimensions of past and present communications and communication trends.
01.03	Select the appropriate platforms for disseminating media to target audiences.
01.04	Select, combine and utilize the appropriate media for various audiences.
02.0	During the planning process for elements of multi-media projects, critically evaluate relevant information and assets for target audiences. The student will be able to:
02.01	Demonstrate the ability to compare and contrast traditional and current production techniques and emerging technologies in the changing media landscape
02.02	Demonstrate competency in the selection of various media for multi/interactive media productions
02.03	Analyze metrics for incorporation into the determination of multi/interactive media productions.
02.04	Discuss ethical and legal issues as they relate to the media industry.
03.0	Demonstrate competency in photography for media. The student will be able to:
03.01	Demonstrate proficient camera and light meter operation.
03.02	Control image depth of field and critical focus by effectively using different focal length lenses.
03.03	Demonstrate competency in navigating image-editing and workflow software.
03.04	Capture raw and jpeg images, and process these images.
03.05	Scan film and prints using scanners.
03.06	Demonstrate proficient mobile camera operation and post processing.
03.07	Produce digital photographs with appropriate contrast, density and tonality.

03.08	Use composition, cropping and point-of-view to create effective image design.
04.0	Demonstrate competency in video pre-production, production and video post-production. The student will be able to:
04.01	Create appropriate lighting for interviews.
04.02	Operate a video camera in studio and in field.
04.03	Create pre-production planning.
04.04	Operate control room equipment.
04.05	Review and organize video and audio in preparation for editing.
05.0	Demonstrate competency in sound recording and creation for media. The student will be able to:
05.01	Select and utilize essential equipment, including microphones, recorders, preamplifiers, and accessories in the capture of dialog and other audio in both field and studio settings.
05.02	Demonstrate competency in gain-staging the analog output of a microphone to the point of digital conversion and capture.
05.03	Demonstrate competency with the main functions of an industry-standard digital audio workstation, such as mixing multiple signals, importing and exporting audio, and editing audio clips.
05.04	Demonstrate an understanding of room acoustics and the impact this has on audio recording within any given space.
05.05	Demonstrate competency with amplitude and spectrum effects such as compression, equalization, noise reduction, expanders, and gates.
05.06	Demonstrate competency with synchronization between various pieces of professional audio and video equipment.
05.07	Demonstrate an understanding and application of modern standards for broadcast audio, such as the International Telecommunications Union's BS.1770.
06.0	Demonstrate competency in design principles. The student will be able to:
06.01	Describe the individual art elements used in design.
06.02	Demonstrate basic principles of design.
06.03	Demonstrate a competency of design tools and materials.
06.04	Define the various job categories that make up the design industry.
06.05	Define basic terminology used in the design industry and its related fields.
06.06	Define visual communication and related components.

06.07	Demonstrate proper usage of design tools, equipment and materials.
06.08	Demonstrate methods for conceptualizing and visualizing ideas.
06.09	Demonstrate knowledge of composition and layout including aesthetic arrangement, placement and relationship of elements.
06.10	Demonstrate the design process as used in the design industry.
06.11	Demonstrate knowledge of basic typography.
06.12	Demonstrate knowledge of measurement systems used in the design industry.
07.0	Demonstrate competency in interactive design. The student will be able to:
07.01	Create design for mobile and web.
07.02	Identify the terms, concepts, and components used in the interactive design.
07.03	Define basic terminology used in the interactive design industry and its related fields.
08.0	Demonstrate competency in writing for media. The student will be able to:
08.01	Learn the use of digital tools and techniques for audience development.
08.02	Identify legal and ethical implications, as well as restrictions on the media, and apply them to writing assignments.
08.03	Know and employ style, terms and jargon associated with media platforms.
08.04	Learn techniques and best practices for content and story development.
09.0	Demonstrate professional interpersonal and business communication skills in a diverse environment. The student will be able to:
09.01	Prepare and verbally deliver factual material in a direct and logical manner.
09.02	Demonstrate scholarly research skills.
09.03	Demonstrate persuasive techniques.
09.04	Demonstrate the effective use of visual aids, technical equipment and projected images.
09.05	Demonstrate professional interviewing skills and general interpersonal skills in diverse populations.
09.06	Demonstrate competency in language, spelling, mechanics and grammar.
09.07	Demonstrate active listening skills for retention of information.

10.0	Create finished multi-media project incorporating still photography, video, audio, web creation, design, analytics, writing and reportage. The student will be able to:
10.01	Demonstrate team skills in the production of multi-media projects.
10.02	Model safe and professional work practices.
10.03	Select and utilize visuals for multi/interactive media productions.
10.04	Select and utilize audio resources for multi/interactive media productions.
10.05	Combine audio and video sources for multi/interactive media productions.
10.06	Utilize interactive design elements to disseminate multi/interactive media productions.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

General Education Course Requirements for AS and AAS Degrees

State Board of Education Rule 6A-14.030(4), F.A.C., identifies 15 credit hours as the minimum amount of general education coursework required in the Associate of Science (AS) degree and the Associate of Applied Science (AAS) degree. In addition, Rule 6A-14.0303, F.A.C., implements s. 1007.25, F.S., and requires students entering a technical education degree program in the 2022-2023 academic year, and thereafter, to complete at least one identified core course in each subject area as part of the general education course requirements (15 credit hours total) before a degree is awarded) The core subject areas include:

- Communication.
- Humanities.
- Mathematics.
- Natural Sciences.
- Social Sciences.

Career and Technical Student Organization (CTSO)

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Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

**Florida Department of Education
Curriculum Framework**

Program Title: Theater and Entertainment Technology
Career Cluster: Arts, A/V Technology and Communication

AS	
CIP Number	1650050202
Program Type	College Credit
Program Length	64 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for a variety of jobs in live entertainment technology.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 64 credit hours.

Standards-

After successfully completing this program, the student will be able to perform the following:

- 01.0 Construct and install scenery to the specifications required in a scene design.
- 02.0 Perform the duties of a stagehand.
- 03.0 Install and operate sound equipment for live performance.
- 04.0 Perform the duties of a stage lighting technician.
- 05.0 Maintain stage, lighting, sound, and shop equipment.
- 06.0 Install and operate AV/multimedia equipment.
- 07.0 Demonstrate safe work practices.
- 08.0 Effectively manage crew(s) and/or production(s) for live entertainment productions.
- 09.0 Demonstrate appropriate communication skills.
- 10.0 Demonstrate appropriate math skills.
- 11.0 Demonstrate appropriate understanding of basic science as it related to live entertainment technology.
- 12.0 Demonstrate employability and entrepreneurial skills.
- 13.0 Demonstrate understanding of the aesthetic requirements of live entertainment projects.

**Florida Department of Education
Student Performance Standards**

Program Title: Theater and Entertainment Technology
CIP Number: 1650050202
Program Length: 64 credit hours

At the completion of this program, the student will be able to:

01.0 Construct and install scenery to the specifications required in a scene design. The student will be able to:

01.01 Use hand and power tools commonly found in scene shops.

01.02 Draft usable construction drawings using industry standard computer aided drafting software.

01.03 Choose materials and hardware appropriate for given scenic construction tasks.

01.04 Construct common two-dimensional scenery.

01.05 Construct common three-dimensional scenery.

01.06 Demonstrate application techniques used in painting scenery.

01.07 Construct properties and mechanical special effects.

01.08 Demonstrate understanding of rigging equipment.

01.09 Assemble prefabricated staging units.

02.0 Perform the duties of a stagehand. The student will be able to:

02.01 Operate equipment commonly found in performance venues.

02.02 Problem solve backstage issues and repairs effectively and safely.

02.03 Perform all duties in a disciplined manner as required by the demands of performance.

02.04 Install and operate special effects such as fog and automated devices.

02.05 Work within time and operating constraints during a live performance.

02.06 Give and receive cues.

02.07 Perform all necessary pre-and post- show checks.

02.08	Communicate through appropriate channels before, during and after a live performance.
03.0	Install and operate sound equipment for live performance. The student will be able to:
03.01	Identify sound equipment used in productions.
03.02	Configure audio system components for an audio recording or live sound reinforcement system resulting in optimal sound quality and ensuring the safety of the equipment and personnel.
03.03	Operate sound equipment in both record and playback mode.
03.04	Utilize audio hardware, software, data protocols, and computer networks.
03.05	Record and edit sound effects for live entertainment productions.
04.0	Perform the duties of a stage lighting technician. The student will be able to:
04.01	Hang, circuit, and focus stage lights to the specifications required in a lighting design.
04.02	Prepare and read standard lighting documentation.
04.03	Identify stage lighting equipment.
04.04	Set control parameters and run data cables for intelligent lighting fixtures.
04.05	Perform the duties of a lighting console operator during rehearsal and performance.
04.06	Program cues on a computerized lighting console.
05.0	Maintain stage, lighting, sound, and shop equipment. The student will be able to:
05.01	Operate test equipment as necessary for the maintenance for entertainment equipment systems.
05.02	Locate and fix malfunctions using applicable diagnostic methods.
05.03	Read and understand technical manuals and credible online sources of equipment and software information.
05.04	Create appropriate documentation of equipment repairs and maintenance.
06.0	Install and operate AV/multimedia equipment. The student will be able to:
06.01	Set up and operate basic video production equipment including, but not limited to studio cameras, video monitors, video decks, switchers and video DAs.
06.02	Set up and operate a variety of video projection and presentations systems.

06.03	Determine layout for an AV show including screen and equipment location.
06.04	Select and install appropriate cable and interfaces for AV set up.
06.05	Perform basic troubleshooting on AV systems.
06.06	Utilize computer hardware, software and networks for video production.
07.0	Demonstrate safe work practices. The student will be able to:
07.01	Identify, understand and abide by safety rules for live production equipment and workspaces.
07.02	Identify health and environmental hazards of materials used in live show production.
07.03	Select and use the appropriate protective personal protective clothing and equipment when working in a shop or stage environment.
07.04	Use shop, lighting, sound, and stage equipment in accordance with both manufacturer and industry safety standards.
07.05	Identify and correct unsafe work practices.
07.06	Demonstrate understanding of electrical safety.
08.0	Effectively manage crew(s) and/or production(s) for live entertainment productions. The student will be able to:
08.01	Perform collaboratively and cooperatively as a member of a technical team within the framework of an organized production.
08.02	Schedule crew assignments in order to meet production deadlines.
08.03	Apply accepted principles of live show technology to production situations.
08.04	Problem-solve in all phases of the production process.
08.05	Prioritize tasks in all phases of the production process.
09.0	Demonstrate appropriate communication skills. The student will be able to:
09.01	Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
09.02	Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
09.03	Read and follow written and oral instructions.
09.04	Read critically by recognizing assumptions and implications and by evaluating ideas.
09.05	Demonstrate the ability to communication both in written and verbal modes using in-person and electronic formats.

09.06	Demonstrate active listening skills in all interpersonal communications.
10.0	Demonstrate appropriate math skills. The student will be able to:
10.01	Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
10.02	Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
10.03	Demonstrate the ability to calculate percentages and estimate costs.
11.0	Demonstrate appropriate understanding of basic science as it related to live entertainment technology. The student will be able to:
11.01	Draw conclusions or make inferences from data.
11.02	Identify health related problems that may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.
11.03	Understand pressure measurement in terms of PSI, inches of mercury, and KPA.
11.04	Understand the basic principles of electricity.
11.05	Understand the basic principles of acoustics.
11.06	Understand the basic principles of light/optics.
12.0	Demonstrate employability and entrepreneurial skills. The student will be able to:
12.01	Create and write a résumé and cover letter.
12.02	Prepare and develop a portfolio, to be presented in appropriate format.
12.03	Identify acceptable work habits.
12.04	Demonstrate competence in job interview techniques.
12.05	Formulate strategy for job search, employment and career after graduation.
12.06	Understand self-employment and business startup strategies.
12.07	Demonstrate computer skills/literacy.
13.0	Demonstrate understanding of the aesthetic requirements of live entertainment projects. The student will be able to:
13.01	Demonstrate understanding of the elements and principles of visual design.
13.02	Demonstrate knowledge of color theory.

13.03 Demonstrate an understanding of how the various design and performance elements work together to create a unified experience for the audience.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

General Education Course Requirements for AS and AAS Degrees

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- Communication.
- Humanities.
- Mathematics.
- Natural Sciences.
- Social Sciences.

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Accommodations

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Certificate Programs

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates (CCC):

Stage Technology (0650050201) – 17 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education
Curriculum Framework**

Program Title: Film Production Technology
Career Cluster: Arts A/V Technology and Communication

AS	
CIP Number	1650060213
Program Type	College Credit
Program Length	64 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts A/V Technology and Communication career cluster.

The purpose of this program is to prepare students for initial employment as film production technicians and personnel. The content includes, but is not limited to, instruction that prepares individuals to function as members of a technical team within the framework of an organized film/video production. Instruction includes production analysis, interpretation, purchasing/renting, scheduling, and the application of production skills to solving unique shooting problems.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 64 credit hours.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate storytelling ability through filmmaking.
- 02.0 Demonstrate the application of film aesthetics in film productions.
- 03.0 Function as part of a team on film productions.
- 04.0 Analyze and execute the operation of the standard equipment, including camera, sound, lighting, and grip in a production.
- 05.0 Analyze and execute the tasks of the production department on films.
- 06.0 Analyze and execute tasks in post-production.
- 07.0 Demonstrate employability skills.
- 08.0 Demonstrate an understanding of entrepreneurship.

**Florida Department of Education
Student Performance Standards**

Program Title: Film Production Technology
CIP Number: 1650060213
Program Length: 64 credit hours

At the completion of this program, the student will be able to:

01.0 Demonstrate storytelling ability through filmmaking. The student will be able to:

01.01 Apply film language in the development of supporting documents.

01.02 Develop supporting documents from a script.

01.03 Create films demonstrating film language and storytelling skills.

02.0 Demonstrate the application of film aesthetics in film productions. The student will be able to:

02.01 Demonstrate an understanding of film history and aesthetics in the development and execution of a film production.

02.02 Demonstrate an understanding of visual communication in the execution of a film production.

02.03 Create shot lists, storyboards, and other pre-production documents that demonstrate the creative use of film aesthetics and visual communication.

02.04 Demonstrate knowledge of camera blocking and screen direction.

02.05 Demonstrate knowledge of production design and the hierarchy of the art department.

03.0 Function as part of a team on film productions. The student will be able to:

03.01 Differentiate the working relationships that exist between the various participants involved in the film making process.

03.02 Perform as a member of a technical team within the framework of an organized film production.

03.03 Adapt learned skills and generate original approaches to work as a team to solve unique production problems.

03.04 Demonstrate collaboration and leadership as a member of a film production team.

04.0 Analyze and execute the operation of the standard equipment, including camera, sound, lighting, and grip in a production. The student will be able to:

Camera

04.01 Organize the proper care, set up, and handling of camera and camera support equipment.

04.02	Demonstrate knowledge of the technical operation and set up of a camera for cinematography.
04.03	Analyze the aesthetic needs of a shot and accomplish them by using standard industry camera equipment.
04.04	Analyze the script for camera lens and shot requirements.
04.05	Demonstrate understanding of different responsibilities within the camera department.
04.06	Analyze production requirements to determine camera equipment needs.
Sound	
04.07	Organize the proper care, set up, technical operation and handling of sound recording equipment.
04.08	Analyze the aesthetic needs of a film and accomplish them by using standard industry sound recording equipment.
04.09	Analyze the script for sound recording and post-production requirements.
04.10	Demonstrate understanding of different responsibilities within the sound recording department.
04.11	Analyze production requirements to determine sound equipment needs.
04.12	Demonstrate execution of sound recording for production and post-production.
Lighting	
04.13	Organize the proper care, set up, technical operation and handling of film lighting equipment.
04.14	Analyze the aesthetic needs of a film and accomplish them by using standard industry lighting equipment.
04.15	Analyze the script for lighting requirements.
04.16	Demonstrate understanding of different responsibilities within the lighting department.
Grip	
04.17	Organize the proper care, set up, technical operation and handling of grip equipment.
04.18	Analyze the aesthetic needs of a film and accomplish them by using standard industry grip equipment.
04.19	Analyze the script for grip equipment requirements.
04.20	Demonstrate understanding of different responsibilities within the grip department.
04.21	Analyze production requirements to determine grip equipment needs.

05.0	Analyze and execute the tasks of the production department on films. The student will be able to:
05.01	Execute the production management of films using appropriate hierarchy.
05.02	Manage resources and personnel to meet production deadlines.
05.03	Interpret a film script to develop supporting pre-production and production documents for their production requirements.
05.04	Adapt learned skills and generate original approaches to solve unique production problems.
05.05	Demonstrate the skills required from a production department in various production settings.
06.0	Analyze and execute tasks in post-production. The student will be able to:
06.01	Demonstrate storytelling skills in the post-production of short films.
06.02	Execute the editing of short films.
06.03	Execute the sound design of short films.
06.04	Execute the color grading of short films.
06.05	Execute the development, creation, and application of graphics and visual effects for films.
06.06	Demonstrate organization of post-production resources and understand post-production workflow.
06.07	Demonstrate application of industry standard approaches to film post-production.
07.0	Demonstrate employability skills. The student will be able to:
07.01	Formulate strategy for post-graduation.
07.02	Demonstrate competence in job interview techniques.
07.03	Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other persons.
07.04	Identify acceptable work habits.
07.05	Demonstrate knowledge of how to navigate the job market for growth in the industry.
08.0	Demonstrate an understanding of entrepreneurship. The student will be able to:
08.01	Describe the importance of entrepreneurship to the film and television industry.
08.02	List the advantages and disadvantages of business ownership.

08.03 Identify the necessary personal characteristics of a successful entrepreneur.
08.04 Identify the business skills needed to operate a small business efficiently and effectively.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

General Education Course Requirements for AS and AAS Degrees

State Board of Education Rule 6A-14.030(4), F.A.C., identifies 15 credit hours as the minimum amount of general education coursework required in the Associate of Science (AS) degree and the Associate of Applied Science (AAS) degree. In addition, Rule 6A-14.0303, F.A.C., implements s. 1007.25, F.S., and requires students entering a technical education degree program in the 2022-2023 academic year, and thereafter, to complete at least one identified core course in each subject area as part of the general education course requirements (15 credit hours total) before a degree is awarded) The core subject areas include:

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- Humanities.
- Mathematics.
- Natural Sciences.
- Social Sciences.

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Certificate Programs

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates (CCC):

- Film Production Fundamentals (0650060203) - 24 credit hours
- Motion Picture Post-Production (0650060205) - 16 credit hours
- Motion Picture Production (0650060204) - 16 credit hours
- Motion Picture Production Management (0650060206) - 16 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education
Curriculum Framework**

Program Title: **Photographic Technology**
Career Cluster: **Arts, A/V Technology and Communication**

AS	
CIP Number	1650060500
Program Type	College Credit
Program Length	64 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment as a photographer or to provide supplemental training for persons previously or currently employed in this occupation. The content includes, but is not limited to, communication skills, leadership skills, human relations and employability skills, safe and efficient work practices, understanding analog and digital processes, and photographic equipment.

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the Photography industry: professional business practices, technical and product skills, lighting in the studio and on location, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology, and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and creative problem-solving skills.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 64 credit hours.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of the photograph production skills, in theory or in practice.
- 02.0 Demonstrate understanding of exposure control.
- 03.0 Make basic photographs.
- 04.0 Demonstrate knowledge of various format cameras.
- 05.0 Demonstrate mastery of archiving and presenting finished photographs.
- 06.0 Apply lighting techniques.
- 07.0 Make commercial photographs on location and in studio.
- 08.0 Produce media presentations.
- 09.0 Demonstrate an understanding of the aesthetics of photographs.
- 10.0 Demonstrate competencies required to manage a photographic business.

**Florida Department of Education
Student Performance Standards**

Program Title: Photographic Technology
CIP Number: 1650060500
Program Length: 64 credit hours

At the completion of this program, the student will be able to:

01.0 Demonstrate knowledge of the photograph production skills, in theory or practice. The student will be able to:

01.01 Understand photographic chemistry.

01.02 Apply camera care and maintenance principles.

01.03 Understand hand-process black and white as well as color film.

01.04 Print black and white as well as color photographs.

01.05 Produce black and white as well as color print using automated device(s).

01.06 Apply post-production techniques using industry-standard software.

02.0 Demonstrate understanding of exposure control. The student will be able to:

02.01 Explain characteristics of various F-stops and shutter speeds.

02.02 Explain appropriate ISO.

02.03 Understand file formats.

03.0 Make basic photographs. The student will be able to:

03.01 Use design principles.

03.02 Make photographs of still and moving subjects.

03.03 Understand various workflows.

04.0 Demonstrate knowledge of various format cameras. The student will be able to:

04.01 Understand medium format up to large format cameras.

05.0 Demonstrate mastery of archiving and presenting finished photographs. The student will be able to:

05.01	Mount photographs.
05.02	Mat/frame photographs.
05.03	Demonstrate the use of file management, metadata and keywords.
06.0	Apply lighting techniques. The student will be able to:
06.01	Understand contrast range in lighting.
06.02	Make photographs with electronic strobe.
06.03	Make photographs with a continuous light source.
06.04	Make photographs in mixed lighting.
07.0	Make commercial photographs on location and in studio. The student will be able to:
07.01	Make portraits.
07.02	Make industrial photographs.
07.03	Make product photographs.
08.0	Produce media presentations. The student will be able to:
08.01	Prepare storyboard.
08.02	Prepare script.
08.03	Create digital files, both still and video.
08.04	Record high quality audio.
08.05	Edit video using industry-standard software.
08.06	Produce finish product.
09.0	Demonstrate an understanding of the aesthetics of photographs. The student will be able to:
09.01	Critique both the form and content of photographs in a classroom setting.
09.02	Demonstrate appropriate responses to criticism in an academic setting.
10.0	Demonstrate competencies required to manage a photographic business. The student will be able to:

10.01	Apply communication skills.
10.02	Apply human relations skills.
10.03	Set rates for photographic work.
10.04	Maintain shop records and files.
10.05	Maintain presentational portfolio.
10.06	Analyze potential market area.
10.07	Analyze and develop a marketing plan.
10.08	Perform cost analysis.
10.09	Apply accounting techniques.
10.10	Prepare basic media release.
10.11	Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
10.12	Demonstrate employability skills.
10.13	Identify photographer's legal rights/responsibilities.
10.14	Identify rules/regulations of copyright.
10.15	Write a business plan.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

General Education Course Requirements for AS and AAS Degrees

State Board of Education Rule 6A-14.030(4), F.A.C., identifies 15 credit hours as the minimum amount of general education coursework required in the Associate of Science (AS) degree and the Associate of Applied Science (AAS) degree. In addition, Rule 6A-14.0303, F.A.C., implements s. 1007.25, F.S., and requires students entering a technical education degree program in the 2022-2023 academic year, and thereafter, to complete at least one identified core course in each subject area as part of the general education course requirements (15 credit hours total) before a degree is awarded) The core subject areas include:

- Communication.
- Humanities.
- Mathematics.
- Natural Sciences.
- Social Sciences.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Certificate Programs

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates (CCC):

Photography (0650060501) - 15 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education
Curriculum Framework**

Program Title: Music and Sound Production Technology
Career Cluster: Arts, A/V Technology and Communication

AS	
CIP Number	1650091300
Program Type	College Credit
Program Length	64 credit hours
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

The purpose of this program is to prepare students for employment in music production occupations or to provide supplemental professional training for persons previously or currently employed in this field. The content includes, but is not limited to, instruction that prepares individuals for positions such as music directors, singers, composers, sound engineers, producers, programmers, salespeople (retail), manufacturer's representatives, consultants, music editors, sound designers, sound systems designers, audio assistants, audio technicians, a/v technicians, studio managers/supervisors, archivists and related workers. This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the Music and Sound Production Technology industry: planning, management, finance, technical and product skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of 64 credit hours.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of basic musical skills.
- 02.0 Demonstrate competence in basic musical instrument skills.
- 03.0 Demonstrate application of control protocols and their relationship to equipment used in the music industry.
- 04.0 Demonstrate set-up and configuration of a computer for audio applications.
- 05.0 Understand the operation of basic reproduction, reinforcement and recording audio equipment.
- 06.0 Demonstrate understanding of requirements for set up and operation of a sound reinforcement system.
- 07.0 Perform transactions with music industry suppliers.
- 08.0 Demonstrate management skills.
- 09.0 Demonstrate knowledge of the legal issues of copyright and contracts.
- 10.0 Demonstrate employability skills.
- 11.0 Demonstrate an understanding of entrepreneurship.

**Florida Department of Education
Student Performance Standards**

Program Title: Music and Sound Production Technology
CIP Number: 1650091300
Program Length: 64 credit hours

At the completion of this program, the student will be able to:

01.0 Demonstrate knowledge of basic musical skills. The student will be able to:

01.01 Demonstrate knowledge of musical structure.

01.02 Analyze the style, structure, and technical content of selected written and performed music.

01.03 Apply listening skills for hearing live and recorded music.

01.04 Identify performance characteristics of musical instruments.

02.0 Demonstrate competence in basic musical instrument skills. The student will be able to:

02.01 Demonstrate basic knowledge of scales and chord structure.

02.02 Follow basic musical notation.

02.03 Demonstrate basic knowledge of a musical instrument.

03.0 Demonstrate application of control protocols and their relationship to equipment used in the music industry. The student will be able to:

03.01 Demonstrate an understanding of Musical Instrument Digital Interface (MIDI).

03.02 Demonstrate proficiency in using MIDI instruments to record sounds using a digital sampler.

03.03 Utilize a computer and multiple MIDI instruments.

03.04 Record a single sound track; add multiple sound tracks, and change MIDI voices using the software.

03.05 Demonstrate an understanding of MIDI and other control protocol in the recording studio.

03.06 Configure MIDI and other show control devices in the studio or live environment.

03.07 Troubleshoot MIDI and control communication problems.

04.0 Demonstrate set-up and configuration of a computer for audio applications. The student will be able to:

04.01	Install and configure software related to audio programs.
04.02	Demonstrate basic knowledge of computer system requirements.
04.03	Install basic peripheral devices related to audio programs.
04.04	Demonstrate working knowledge of digital multitrack transmission systems such as MADI, and of Audio over IP such as DANTE.
04.05	Configure a digital audio matrix.
04.06	Configure multichannel digital input and output (I/O) interfaces.
04.07	Setup and configure cloud-based recording and collaboration systems.
04.08	Configure digital project studio systems.
05.0	Understand the operation of basic reproduction, reinforcement and recording audio equipment. The student will be able to:
05.01	Assess the audio technology needs of a music production (Pre-Production).
05.02	Appraise musical and other types of sound needs of client (personnel, hardware, software, etc.).
05.03	Evaluate available audio resources.
05.04	Select and configure appropriate hardware and software.
05.05	Develop a production plan to meet client needs.
05.06	Manage personnel and technical resources for the execution of the project.
05.07	Evaluate the final project for quality and appropriateness.
05.08	Formulate strategies for producing multi-track recording.
05.09	Evaluate production needs for microphone applications.
05.10	Demonstrate proficiency with multi-track, multi-channelled mixing consoles.
05.11	Formulate strategies for electronic editing.
05.12	Formulate strategies for multi-track recording to industry standards.
05.13	Configure audio recording systems for optimal and appropriate use of signal processing equipment.
05.14	Develop strategies for using MIDI and other control protocols.

05.15	Engineer a recording session and prepare appropriate documentation.
05.16	Mix multi-track recordings in a variety of multichannel audio formats, from 2-channel stereo to high channel counts like 5.1, 7.1 and 9.1.
05.17	Configure audio equipment for optimal musical and other types of sound mix.
05.18	Create a mixing plan.
05.19	Evaluate the quality of multi-track recording.
05.20	Interpret audio needs for end user.
05.21	Supervise equipment operator.
05.22	Evaluate quality of the final mix to industry standards.
05.23	Produce deliverables to fulfill client and project needs, in accordance to Industry standards.
06.0	Demonstrate understanding of requirements for set up and operation of a sound reinforcement system. The student will be able to:
06.01	Demonstrate basic understanding of audio electroacoustic concepts (e.g., headroom, biasing, distortion, equalization, frequency response, etc.).
06.02	Demonstrate basic understanding of electronics (Ohm's Law, Power equation, resistivity and conductivity, Impedance, etc.).
06.03	Demonstrate a good understanding of the decibel as a relative scale, and the differences and conversions of the different types of decibel used in the industry (dBSPL, dBu, dBV, dBFS, etc.), along with the different standard reference levels (-18 dBFS EBU, -20 dBFS SMPTE, +4 dBu VU, etc.).
06.04	Demonstrate basic understanding of acoustics.
06.05	Demonstrate knowledge of principles of operation of analog/digital devices (block diagram).
06.06	Demonstrate basic understanding of audio signal flow in an analog or digital chain.
06.07	Formulate strategies for audio reinforcement of music productions.
06.08	Evaluate performance needs.
06.09	Evaluate technical needs as appropriate to given spaces.
06.10	Configure a sound reinforcement system to meet performance needs.
06.11	Analyze various audio qualities to achieve proper sound mix.
06.12	Perform transactions with audio suppliers.

06.13	Design a plot for proper microphone and speaker selection and placement.
07.0	Perform transactions with music industry suppliers. The student will be able to:
07.01	Research sources for needed equipment, supplies and educational materials.
07.02	Differentiate the levels of quality in the hierarchy of manufacturers, distributors and suppliers.
07.03	Evaluate purchasing agreements including bids, warranties, and maintenance contracts.
07.04	Evaluate the technical specifications of audio related products.
07.05	Execute the purchase of audio equipment, supplies and educational materials.
08.0	Demonstrate management skills. The student will be able to:
08.01	Organize scheduling for live music performances.
08.02	Organize scheduling for recording sessions.
08.03	Develop and manage budgets for musical events (performance sessions and equipment).
08.04	Manage live musical performances.
08.05	Manage sound and music recording sessions.
08.06	Demonstrate understanding of music and sound production audio personnel hierarchy.
09.0	Demonstrate knowledge of legal issues of copyright and contracts. The student will be able to:
09.01	Define and implement contractual agreements with unions, agents, managers and other representatives of the commercial music production industry.
09.02	Evaluate and apply copyright and licensing laws.
09.03	Identify potential music marketing areas and manage product distribution.
09.04	Recognize the right of artists and employ successful negotiation of contractual agreements.
10.0	Demonstrate employability skills. The student will be able to:
10.01	Create and write a résumé and cover letter.
10.02	Prepare and compile a work portfolio, demo, and/or recording.
10.03	Identify acceptable work habits.

10.04	Demonstrate competence in job interview techniques.
10.05	Formulate strategy for post-graduation.
10.06	Generate a career plan.
10.07	Demonstrate knowledge of the Federal Hazard Communication regulation 29 CFR 1910.1200.
11.0	Demonstrate an understanding of entrepreneurship. The student will be able to:
11.01	Define entrepreneurship.
11.02	Describe the importance of entrepreneurship to the American economy.
11.03	List the advantages and disadvantages of business ownership.
11.04	Identify the risks involved in ownership of a business.
11.05	Identify the necessary personal characteristics of a successful entrepreneur.
11.06	Identify the business skills needed to operate a small business efficiently and effectively.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

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- Communication.
- Humanities.
- Mathematics.
- Natural Sciences.
- Social Sciences.

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Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Certificate Programs

A College Credit Certificate consists of a program of instruction of less than sixty (60) credits of college-level courses, which is part of an AS or AAS degree program and prepares students for entry into employment (Rule 6A-14.030, F.A.C.). This AS degree program includes the following College Credit Certificates (CCC):

Audio Electronics Specialist (0610020301) – 24 credit hours

Audio Technology (0610020303) – 15 credit hours

Digital Music Production (0610020304) – 12 credit hours

Standards for the above certificate programs are contained in separate curriculum frameworks.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Design
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Career Certificate Program		
Program Number	B070600	
CIP Number	0510030306	
Grade Level	30, 31	
Program Length	1200 hours	
Teacher Certification	Refer to the Program Structure section.	
CTSO	SkillsUSA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level	Computation (Mathematics): 9	Communications (Reading and Language Arts): 9

Purpose

The purpose of this program is to prepare students for employment in digital publishing positions, such as Information Technology Assistants, Production Assistants, Digital Assistant Designers, Graphic Designers, and Multimedia Designers.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, enhanced practical experiences in computer generated art and text, graphic design, graphic production, electronic design skills, preparation of electronic layouts and illustrations, and electronic scanning, and development of specialized skills in multimedia presentations.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of five (5) occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3) (b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	OTA0040	Information Technology Assistant	OTA0040 Teacher Certifications	150 hours
B	GRA0024	Production Assistant	MANAG SUPV 7G BUS DP @7 %G BUS ED 1 @2 CLERICAL @7 7G COMM ART @7 7G COMP SCI 6 @2 ELECT DP @7 %G PRINTING @7 7G SECRETAR 7 G TC COOP ED @7 TEC ED 1 @2 ENG&TEC ED1@2 TEC ELEC \$7 G VOE @7	150 hours
C	GRA0025	Digital Assistant Designer		300 hours
D	GRA0026	Graphic Designer		300 hours
E	GRA0027	Media Designer		300 hours

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

Information Technology Assistant (OTA0040) is the first course in this program. Standards 01.0 – 15.0 are associated with this course.

- 01.0 Demonstrate knowledge, skill, and application of information technology to accomplish job objectives and enhance workplace performance.
- 02.0 Develop an awareness of microcomputers.
- 03.0 Demonstrate an understanding of networks.
- 04.0 Use word processing applications to enhance the effectiveness of various types of documents and communication.
- 05.0 Use presentation applications to enhance communication skills.
- 06.0 Use spreadsheet applications to enhance communication skills.
- 07.0 Use database applications to store and organize data.
- 08.0 Use electronic mail to enhance communication skills.
- 09.0 Investigate individual assessment and job/career exploration and individual career planning that reflect the transition from school to work, lifelong learning, and personal and professional goals.
- 10.0 Incorporate appropriate leadership and supervision techniques, customer service strategies, and standards of personal ethics to accomplish job objectives and enhance workplace performance.
- 11.0 Demonstrate competence using computer networks, internet and online databases to facilitate collaborative or individual learning and communication.
- 12.0 Develop awareness of computer languages, web-based and software applications, and emerging technologies.
- 13.0 Demonstrate an understanding of basic html by creating a simple web page.
- 14.0 Demonstrate comprehension and communication skills.
- 15.0 Use social media to enhance online communication and develop an awareness of a digital footprint.

Production Assistant

- 16.0 Demonstrate knowledge of digital publishing concepts.
- 17.0 Demonstrate knowledge of basic digital imaging.
- 18.0 Demonstrate proficiency in the safe and ethical use of the Internet to locate information.
- 19.0 Identify project requirements, define project planning, and understand the design process.
- 20.0 Perform page layout and measurement activities.
- 21.0 Demonstrate an understanding of color and its role in digital design.
- 22.0 Demonstrate a basic understanding of typography.
- 23.0 Demonstrate an understanding of elements and principles of design.
- 24.0 Demonstrate basic skill in digital photography.
- 25.0 Demonstrate skills in the use of raster software applications.
- 26.0 Demonstrate basic skills in the use of vector software applications.
- 27.0 Demonstrate basic technical skills using a desktop publishing application.
- 28.0 Develop an awareness of the emergent technologies associated with digital design.
- 29.0 Demonstrate understanding in page layout using desktop publishing applications.
- 30.0 Demonstrate an understanding of career opportunities and requirements in the field of digital design.

Digital Assistant Designer

- 31.0 Perform critical thinking activities.
- 32.0 Demonstrate the ability to set project requirements, engage in project planning, and utilize the design process.
- 33.0 Demonstrate an intermediate understanding of typography.
- 34.0 Demonstrate skills in the use of vector software applications.
- 35.0 Demonstrate an intermediate understanding in digital publishing operations.
- 36.0 Demonstrate skills in promotional design and application.
- 37.0 Demonstrate proficiency in digital imaging.
- 38.0 Demonstrate the ability to apply the design process.
- 39.0 Demonstrate understanding in the creation of digital design solutions involving motion or special effects.
- 40.0 Demonstrate an understanding of the use of emergent technologies in digital design industries.
- 41.0 Identify relevant career/college opportunities and produce required documents.
- 42.0 Demonstrate the ability to independently set, design and evaluate project requirements, project planning, model project planning and utilize the design process.
- 43.0 Demonstrate understanding in creating a simple webpage.
- 44.0 Demonstrate an advanced understanding in digital publishing operations.
- 45.0 Demonstrate the ability to create a multimedia presentation.
- 46.0 Demonstrate advanced knowledge and skills relative to the design process.
- 47.0 Demonstrate proficiency in digital photography.
- 48.0 Plan, organize, and carry out collaborative digital design projects.
- 49.0 Demonstrate proficiency in the creation of a digital design product using mobile communication devices.
- 50.0 Create a portfolio (print and/or digital).

Graphic Designer

- 51.0 Demonstrate mastery in digital publishing operations.
- 52.0 Demonstrate proficiency in website design.
- 53.0 Compare and contrast various digital media delivery systems.
- 54.0 Demonstrate advanced project design capabilities associated with digital publishing.
- 55.0 Refine a portfolio (print and/or digital).
- 56.0 Demonstrate proficiency in the creation of digital design solutions involving motion or special effects.
- 57.0 Demonstrate advanced ability to create and manipulate digital images using software applications.
- 58.0 Maintain a portfolio (print and/or digital).

Media Designer

- 59.0 Organize and carry out independent project plans for creating various digital design products.
- 60.0 Demonstrate mastery in creating and manipulating digital images using software applications.
- 61.0 Demonstrate advanced understanding of the Elements and Principles of Art and Design.
- 62.0 Consolidate coursework into a professional portfolio.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Design
Career Certificate Program Number: B070600

Course Number: OTA0040
Occupational Completion Point: A
Information Technology Assistant – 150 Hours

Information Technology Assistant (OTA0040) is part of several programs across the various CTE career clusters. To ensure consistency, the standards and benchmarks for this course (01.0 – 15.0) have been placed in a separate document. To access this document, visit: [Information Technology Assistant \(OTA0040\)](#)

Course Number: GRA0024
Occupational Completion Point: B
Production Assistant – 150 Hours

16.0 Demonstrate knowledge of digital publishing concepts. The student will be able to:

16.01 Define the terms commonly used in digital publishing.

16.02 Identify the characteristics of paper (e.g., weight and point).

16.03 Apply different types of color (e.g., RGB, CMYK, Pantone Color Matching System, and HEX).

16.04 Identify software used in digital publishing.

16.05 Differentiate between raster (bitmap) and vector graphic images.

16.06 Compare and contrast image formats (e.g., BMP, EPS, GIF, JPEG, PDF, PNG, RAW, and TIF).

17.0 Demonstrate knowledge of basic digital imaging. The student will be able to:

17.01 Demonstrate proper use of scanners, digital cameras, and various input devices.

17.02 Identify the attributes of line art, grayscale, duotone, spot color and the four-color process.

18.0 Demonstrate proficiency in the safe and ethical use of the Internet to locate information. The student will be able to:

18.01 Understand the principles of copyright.

18.02	Identify and apply Copyright Fair Use guidelines.
18.03	Demonstrate an understanding of safe and ethical Internet usage.
19.0	Identify project requirements, define project planning, and understand the design process. The student will be able to:
19.01	Identify the purpose, audience, and the needs of the audience for the preparation of design projects.
19.02	Research and describe the implications of audience, purpose/message, and time constraints relative to a design project.
19.03	Determine project specifications.
19.04	Define design criteria and design constraints.
19.05	Produce basic thumbnail sketches and rough designs.
19.06	Identify project management tasks and responsibilities.
20.0	Perform page layout and measurement activities. The student will be able to:
20.01	Determine the appropriate type of basic layout for a specified problem (e.g., audience and purpose).
20.02	Identify distinct components in a layout (e.g., headlines, subheads, and body copy).
20.03	Demonstrate basic use of typography (e.g., visual hierarchy, proximity, alignment, contrast, and repetition).
20.04	Compare and contrast units of measurement (e.g., inches, centimeters, millimeters, points, picas, and pixels).
20.05	Produce a variety of design layouts (e.g., flyers, postcards, brochures, business cards, and letterhead).
20.06	Incorporate clip art, images, borders, and other special effects into a layout.
20.07	Select the appropriate color format and resolution for a variety of purposes (e.g., web and print).
21.0	Demonstrate an understanding of color and its role in digital design. The student will be able to:
21.01	Understand the color wheel and its uses.
21.02	Describe the spectral colors in the visible light spectrum.
21.03	Define and explain the terminology related to color (e.g., Chroma, lightness, saturation, hue, intensity, luminance/value, shade, and tint).
21.04	Describe the difference between additive and subtractive color mixing.
21.05	Compare and contrast RGB and CYMK color models as used in digital design.

21.06	Demonstrate the application of color theory to design practices.
22.0	Demonstrate a basic understanding of typography. The student will be able to:
22.01	Define and describe the terminology related to character and line spacing (e.g., leading, kerning, tracking, baseline shift, and ligature).
22.02	Identify the characteristics and psychology of type, type families, type series, and type styles.
22.03	Understand the installation and application of fonts.
23.0	Demonstrate an understanding of elements and principles of design. The student will be able to:
23.01	Identify the elements of design (line, shape, mass, color, texture, etc.).
23.02	Identify the principles of design (variety, movement, emphasis, balance, space, etc.).
24.0	Demonstrate basic skill in digital photography. The student will be able to:
24.01	Demonstrate knowledge of ethics related to digital images/imaging; examine legal and content-related issues
24.02	Demonstrate the operation of a digital camera (typical features/modes).
24.03	Apply effective design principles in digital photography compositions (e.g., rule of thirds).
24.04	Develop an understanding of metadata and the digital photography workflow.
25.0	Demonstrate skills in the use of raster software applications. The student will be able to:
25.01	Demonstrate basic knowledge of the tools and techniques for using a raster-based software application.
25.02	Demonstrate skill in importing, transforming and cropping images.
25.03	Create and edit images/photographs using digital imaging software (e.g., layers, image editing, adjustments, filters, and selections).
25.04	Demonstrate skill in raster image manipulation, color correction, and special effects.
25.05	Demonstrate an understanding of image resolution and compression factors such as transmission speed, color reduction, and delivery media parameters.
26.0	Demonstrate basic skills in the use of vector software applications. The student will be able to:
26.01	Demonstrate basic knowledge of the tools and techniques for using vector software applications.
26.02	Create and edit various illustrations using vector software (e.g., line art, drawing basics, transforming/applying effects to objects, painting, type and type effects, and layers).

27.0	Demonstrate basic technical skills using a desktop publishing application. The student will be able to:
27.01	Determine the activities and implications of content preparation and proofreading.
27.02	Incorporate scanned and digital photographs into documents comprising a specified design (e.g., poster, brochure, card, and advertisement).
27.03	Proofread manually and digitally.
28.0	Develop an awareness of the emerging technologies associated with digital design. The student will be able to:
28.01	Compare and contrast emerging technologies relative to their role in digital design (e.g., wireless, cloud-based, mobile, portable devices, and kiosks).
28.02	Describe social media as a form of digital design.
28.03	Describe the emergent and evolving nature of software applications used in interactive design.
28.04	Explain how the use of advanced image sensing devices have altered the manner in which communication takes place, especially those utilizing Quick Response (QR) Codes and other forms of two-dimensional bar coding techniques.
29.0	Demonstrate understanding in page layout using desktop publishing applications. The student will be able to
29.01	Design a document using grids and formats.
29.02	Produce documents integrating the Elements and Principles of Art and Design.
30.0	Demonstrate an understanding of career opportunities and requirements in the field of digital design. The student will be able to:
30.01	Discuss individual interests related to a career in digital design.
30.02	Identify the skills required of a digital designer.
30.03	Explore career opportunities in the field of digital design.
30.04	Explore secondary and post-secondary educational opportunities related to digital design.
30.05	Identify job search platforms.
Course Number: GRA0025 Occupational Completion Point: C Digital Assistant Designer – 300 Hours	
31.0	Perform critical thinking activities. The student will be able to:
31.01	Research a digital design problem and determine the most appropriate problem-solving method to enhance the functional,

	economic, and ethical viability of a project.
31.02	Use critical thinking skills to evaluate information and select relevant material.
32.0	Demonstrate the ability to set project requirements, engage in project planning, and utilize the design process. The student will be able to:
32.01	Produce final designs based on specifications.
32.02	Make decisions based on specifications.
32.03	Explain the relationship between design criteria and design constraints.
33.0	Demonstrate an intermediate understanding of typography. The student will be able to:
33.01	Demonstrate an understanding of the history of typography.
33.02	Describe the principles of typographic design as they relate to digital design.
33.03	Compare and contrast the techniques of typographic communication relative to appropriateness and effectiveness.
33.04	Demonstrate proficiency in incorporating typographic techniques into a communication design.
34.0	Demonstrate skills in the use of vector software applications. The student will be able to:
34.01	Demonstrate skill in vector image manipulation, color correction, and special effects.
34.02	Demonstrate ability to convert vector files to raster files.
35.0	Demonstrate an intermediate understanding in digital publishing operations. The student will be able to:
35.01	Produce a variety of color designs using different color techniques; include process color and spot color.
35.02	Prepare output files using prepress operations (e.g., color separation, font management, and file management).
35.03	Read work orders and prepare electronic files that meet all specifications.
35.04	Understand how to prepare interactive components (hyperlinks, buttons, etc.).
36.0	Demonstrate skills in promotional design and application. The student will be able to:
36.01	Identify the types of promotional designs used in various industries.
36.02	Write a promotional message that appeals to a specified target market.
36.03	Use design principles to prepare promotional messages (e.g., slogans and taglines).

36.04	Produce designs for the appropriate advertising medium.
36.05	Use advertising guidelines to design appropriate sample ads (print, television, and the Internet, etc.).
37.0	Demonstrate proficiency in digital imaging. The student will be able to:
37.01	Demonstrate understanding of and proficiency in the use of formats and modes.
37.02	Demonstrate proficiency with image editing software.
37.03	Complete projects using appropriate resolution and screen values (e.g., DPI, LPI, and PPI).
37.04	Retouch digital photographs; utilize tones, hues, and values, etc.
37.05	Demonstrate proficiency in digital image manipulation (e.g., compositing, destructive vs. non-destructive editing, masks, and color-correction).
38.0	Demonstrate the ability to apply the design process. The student will be able to:
38.01	Determine whether a digital design problem should be addressed or resolved.
38.02	Conduct a brainstorming exercise (e.g., concept mapping and graphic organizers).
38.03	Develop a digital design solution using the design process.
38.04	Evaluate an existing design using conceptual, physical, or mathematical models; note aspects for improvement; determine whether the design meets criteria and constraints.
38.05	Identify the criteria and constraints associated with a digital design problem and select the most appropriate solution based on these factors.
38.06	Evaluate the quality, efficiency, and productivity of an existing or proposed design; refine the design accordingly.
39.0	Demonstrate understanding in the creation of digital design solutions involving motion or special effects. The student will be able to:
39.01	Demonstrate an understanding of kinetic typography.
39.02	Design a communication solution that employs animation or motion (e.g., graphics, text, and video) to achieve or enhance the intended message.
39.03	Describe the design constraints associated with devices (e.g., tablet, kiosk, and smartphone) used to deliver digital design products.
40.0	Demonstrate an understanding of the use of emerging technologies in digital design industries. The student will be able to:
40.01	Discuss trends in digital and printed mediums.
40.02	Explain the various technologies associated with digital design, advertising, and associated industries.

40.03	Compare and contrast printing processes.
41.0	Identify relevant career/college opportunities and produce required documents. The student will be able to:
41.01	Reinforce competence in job interview skills and techniques.
41.02	Create a professional résumé and letter of introduction.
41.03	Procure letters of recommendation; list awards, certifications and recognition received.
42.0	Demonstrate the ability to independently set, design and evaluate project requirements, project planning, model project planning and utilize the design process. The student will be able to:
42.01	Demonstrate knowledge of project management tasks and responsibilities.
42.02	Evaluate solutions to ensure the sustainability and effectiveness of a digital design product (e.g., visual appeal, audience, media, and market research).
42.03	Identify basic usability, readability, and accessibility standards.
42.04	Recommend final design based on the relationship between design criteria and design constraints.
42.05	Utilize a variety of approaches to solve digital design problems.
43.0	Demonstrate understanding in creating a simple webpage. The student will be able to:
43.01	Convert publications for viewing on the Internet.
43.02	Optimize images and files for the web.
43.03	Create a simple webpage and use hyperlinks.
43.04	Develop awareness of acceptable website design.
43.05	Demonstrate an understanding of WYSIWYG editors.
44.0	Demonstrate an advanced understanding in digital publishing operations. The student will be able to:
44.01	Produce multiple projects using a variety of software programs.
44.02	Demonstrate the ability to prepare output files.
44.03	Demonstrate proficiency in the use of a raster-based illustration program.
44.04	Demonstrate proficiency in the use of a vector-based illustration program.

45.0	Demonstrate the ability to create a multimedia presentation. The student will be able to:
45.01	Create and incorporate multimedia files; add audio, links, images/photos, and video.
45.02	Demonstrate the ability to create a multimedia PDF.
45.03	Demonstrate proficiency in the use of 2D and 3D animation effects.
45.04	Create links in webpages, PDF files, and other documents.
45.05	Optimize images for Internet publication.
45.06	Incorporate multimedia elements into digitally delivered documents/products.
45.07	Generate presentation following accessibility guidelines.
45.08	Generate presentations with embedded content.
46.0	Demonstrate advanced knowledge and skills relative to the design process. The student will be able to:
46.01	Demonstrate the ability to represent a concept.
46.02	Determine the most effective software applications for the digital design problem.
46.03	Use communication, analysis, and design skills to define project specifications that meet the client's needs/desires; include purpose, mood, and audience.
46.04	Demonstrate increased proficiency in the use of tools and techniques in desktop/digital publishing software applications (e.g., layout, text, graphics, color, transparency, and output).
46.05	Define, design, and complete digital design projects; account for time and resources.
46.06	Create a project plan to account for the time and resources to complete the project.
46.07	Facilitate project completion based on a documented plan related to the design process.
47.0	Demonstrate proficiency in digital photography. The student will be able to:
47.01	Demonstrate proficiency in adjusting the hardware features (e.g., manual settings, shutter speed, f-stops) of a basic digital single-lens reflex camera (DSLR or digital SLR).
47.02	Demonstrate knowledge of editing processes on smartphone devices; recognize the availability of apps related to photograph editing.
47.03	Demonstrate understanding of white balance and ISO.
47.04	Understand the role of lighting in photographic composition; develop an awareness of and use the three-point lighting concept.

47.05	Use imaging techniques (e.g., High Dynamic Range, panoramic, long exposure, stop motion, and time lapse) to achieve different artistic effects.
47.06	Demonstrate the use of various photography techniques (e.g., black and white photography and macro photography).
47.07	Demonstrate knowledge of photography by creating a variety of photos that include appropriate composition, framing, and point-of-view (POV).
48.0	Plan, organize, and carry out collaborative digital design project(s). The student will be able to:
48.01	Apply the design process to determine the scope of a project.
48.02	Identify the resources required for the project.
48.03	Organize a team and assign specific tasks according to individual strengths.
48.04	Develop a project plan (conduct research, design, development, and evaluation activities) for the project.
48.05	Determine project priorities and the timeline for completion.
48.06	Carry out the project plan to successful completion.
48.07	Create a presentation to articulate the problem, the solution, the selected process, conclusions, and lessons learned (self-reflection).
49.0	Demonstrate proficiency in the creation of a digital design product using mobile communication devices. The student will be able to:
49.01	Design and create digital design products suitable for delivery via multiple media options (e.g., smartphones, tablets, and laptops).
49.02	Examine the design implications of products intended for delivery via mobile devices.
49.03	Compare and contrast the security and privacy issues associated with different delivery media, particularly in regard to social media.
49.04	Reinforce the implications of copyright and compare various licensing practices.
50.0	Create a portfolio (print and/or digital). The student will be able to:
50.01	Assess personal interests and create an individual career plan that reflects the transition from school to work, lifelong learning, and personal and professional goals.
50.02	Prepare a traditional (hard copy) portfolio.
50.03	Prepare a digital portfolio.
50.04	Identify opportunities to present the portfolio to an audience.
50.05	Refine and implement a plan to facilitate personal growth and skill development related to career opportunities in digital design.

50.06 Incorporate a résumé and letter of interest in portfolio.

Course Number: GRA0026
Occupational Completion Point: D
Graphic Designer – 300 Hours

51.0	Demonstrate mastery in digital publishing operations. The student will be able to:
51.01	Establish workflows using advanced features in desktop publishing software.
51.02	Create documents using advanced features in desktop publishing software.
52.0	Demonstrate proficiency in website design. The student will be able to:
52.01	Compare and contrast various specialized web design programs.
52.02	Demonstrate proficiency using a WYSIWYG editor.
52.03	Understand how to prepare interactive components (hyperlinks, buttons, etc.).
53.0	Compare and contrast various digital media delivery systems. The student will be able to:
53.01	Explain the benefits and constraints of fixed versus streaming digital media.
53.02	Describe the variations in design considerations between the mass display and on-demand display of digital media.
53.03	Discuss the variations in design considerations related to digital signage.
53.04	Describe the design implications of digital images and/or graphics based on projected, mobile and Wi-Fi delivery media.
54.0	Demonstrate advanced project design capabilities associated with digital publishing. The student will be able to:
54.01	Demonstrate advanced capabilities in the use of tools and techniques in digital publishing software applications (e.g., layout of a document, text, graphics, color/transparency, and output).
55.0	Refine a portfolio (print and/or digital). The student will be able to:
55.01	Refine a portfolio.
55.02	Present an updated portfolio to an audience.
56.0	Demonstrate proficiency in the creation of digital design solutions involving motion or special effects. The student will be able to:
56.01	Demonstrate proficiency in the use of editing software to create a product featuring special visual effects.

56.02	Design and create an interactive digital design product featuring the use of rich media.
57.0	Demonstrate advanced ability to create and manipulate digital images using software applications. The student will be able to:
57.01	Demonstrate advanced capabilities in the use of tools and techniques in raster-based software applications.
57.02	Demonstrate advanced capabilities in the use of tools and techniques in vector-based software applications.
58.0	Maintain a portfolio (print and/or digital). The student will be able to:
58.01	Continue to update the portfolio.
58.02	Refine and present digital portfolio to an audience.

Course Number: GRA0027
Occupational Completion Point: E
Media Designer – 300 Hours

59.0	Organize and carry out independent project plans for creating various digital design products. The student will be able to:
59.01	Apply the design process to determine the goal, scope, criteria, constraints, and timeline of the project.
59.02	Work as part of the project team; support the project's focus, direction and progress.
59.03	Identify the required resources for a specified project.
59.04	Plan and conduct research, design, development, and evaluation activities for the successful completion of the project.
59.05	Carry out the project plan to successful completion.
59.06	Create a presentation to articulate the problem, the solution, the selected process, conclusions, and lessons learned (self-reflection).
60.0	Demonstrate mastery in creating and manipulating digital images using software applications. The student will be able to:
60.01	Demonstrate mastery using tools and techniques in raster-based software applications (e.g., layers, adjustments, filters, special effects, selections, masks, and channels).
60.02	Demonstrate mastery using tools and techniques in vector-based software applications (e.g., line art, drawing, transforming/applying effects to objects, painting, type and type effects, and layers).
61.0	Demonstrate advanced understanding of the Elements and Principles of Art and Design. The student will be able to:
61.01	Apply the Elements of Art and Design (line, shape, mass, value, space, texture, color, lighting).

61.02	Apply the Principles of Art and Design (balance, unity, contrast, rhythm, proportion, emphasis, movement, scaling).
61.03	Apply the Elements and Principles of Art and Design to enhance the message of the image/text and layout.
61.04	Utilize design elements and principles to create cohesive digital design projects.
62.0	Consolidate coursework into a professional portfolio. The student will be able to:
62.01	Assess personal interests and create an individual career plan that reflects the transition from school to work, lifelong learning, and personal and professional goals.
62.02	Refine and implement a plan to facilitate personal growth and skill development related to career opportunities in digital design.
62.03	Develop a personal identity brand package (business cards, letters of interest, resume).
62.04	Finalize a traditional (hard copy) portfolio.
62.05	Finalize a digital portfolio.
62.06	Present the finalized portfolio(s) to an audience.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Basic Skills

In Career Certificate Programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Computation (Mathematics) and Communications (Reading and Language Arts). These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02, Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01, F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College System Institution must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91, F.S.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Audio Production
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Career Certificate Program		
Program Number	I100230	
CIP Number	0650060223	
Grade Level	30, 31	
Program Length	1050 hours	
Teacher Certification	Refer to the Program Structure section.	
CTSO	SkillsUSA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level	Computation (Mathematics): 9	Communications (Reading and Language Arts): 9

Purpose

The purpose of this program is to prepare students for initial employment as radio and television announcers, audio and video equipment technicians, sound engineering technicians, and broadcast technicians.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, communication skills, leadership skills, human relations and employability skills; safe and efficient work practices; announcing and moderating programs; preparing copy, programming, and operating audio broadcast equipment to support the production of materials or programs.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of four occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	RTT0522	Broadcast Announcer	TEC ED 1 @ 2 ENG&TEC ED1@2 TEC ELEC ¶ 7 ¶ G TV PRO TEC @7 7G	150 hours
B	RTT0523	Audio Equipment Technician		300 hours
C	RTT0524	Sound Engineering Technician		300 hours
D	RTT0527	Audio Broadcast Technician		300 hours

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of school and classroom procedures.
- 02.0 Demonstrate the ability to operate an audio console.
- 03.0 Demonstrate knowledge of production writing.
- 04.0 Demonstrate news-writing skills.
- 05.0 Demonstrate appropriate voice-over skills.
- 06.0 Demonstrate appropriate on-air skills.
- 07.0 Demonstrate the appropriate broadcast speaking manner.
- 08.0 Demonstrate the set up and configuration of a computer for audio applications.
- 09.0 Understand the operation of basic reproduction, reinforcement and recording audio equipment.
- 10.0 Demonstrate understanding of the requirements for set up and operation of a sound reinforcement system.
- 11.0 Demonstrate the application of control protocols and their relationship to equipment used in the music industry.
- 12.0 Demonstrate basic operation of a digital audio workstation.
- 13.0 Demonstrate basic digital production skills.
- 14.0 Demonstrate advanced digital production skills.
- 15.0 Perform transactions with music industry suppliers.
- 16.0 Plan, coordinate, and manage an audio broadcast or album.
- 17.0 Demonstrate knowledge of legal issues related to copyright.
- 18.0 Demonstrate knowledge of current and future digital audio networking standards.
- 19.0 Demonstrate professionalism and employability skills.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Audio Production
Career Certificate Program Number: I100230

Course Number: RTT0522
Occupational Completion Point: A
Broadcast Announcer – 150 Hours

01.0	Demonstrate knowledge of school and classroom procedures. The student will be able to:
01.01	Verbalize the rules and operational procedures of the school and classroom.
01.02	State the nature of the instruction.
01.03	Identify what will be learned in relation to stated goals and existing job opportunities.
02.0	Demonstrate the ability to operate an audio console. The student will be able to:
02.01	Demonstrate an ability to control the audio console during the recording of a show or program; combine all the sound elements onto tape, compact disc or for broadcast.
02.02	Route outside organizations through the audio console or computer.
02.03	Demonstrate application of an appropriate recording mix while adjusting audio levels.
02.04	Demonstrate the ability to keep the program on time according to the production plan.
02.05	Perform to high standards in the role of audio console operator in varied format situations.
02.06	Demonstrate knowledge of the audio console signal flow.
03.0	Demonstrate knowledge of production writing. The student will be able to:
03.01	Explain the job of a copywriter and outline the elements of good copy and copy writing.
03.02	Demonstrate the ability to write commercial copy in its various forms.
03.03	Demonstrate the ability to write a production plan for a show.
03.04	Demonstrate the ability to write lyrics for a song or jingle.
03.05	Demonstrate the ability to write show intros, outros and bumpers.

04.0	Demonstrate news-writing skills. The student will be able to:
04.01	Differentiate between news, commentary, and editorials.
04.02	Demonstrate the ability to mark, edit, and present news in an acceptable manner.
04.03	Explain the various sources of news and how they are used.
04.04	List the elements that constitute news materials and evaluate them.
04.05	Demonstrate the ability to write news stories in broadcast style.
05.0	Demonstrate appropriate voice-over skills. The student will be able to:
05.01	Demonstrate the ability to read aloud in a professional broadcast manner.
05.02	Modify reading speed as required to properly complete their assignment in the allotted time.
05.03	Demonstrate the ability to receive and properly act upon direction given by the commercial producer.
05.04	Understand the concept of voice acting and playing a role while speaking.
05.05	Perform the various assignments in a professional manner according to industry standards.
06.0	Demonstrate appropriate on-air skills. The student will be able to:
06.01	State the characteristics of various microphones and demonstrate the ability to use them.
06.02	Handle outside organizations through the console.
06.03	Demonstrate how to handle changes in show format during a recording or live broadcast.
06.04	Perform the various assignments in a professional manner according to industry standards.
06.05	List the elements and procedures of log keeping.
07.0	Demonstrate appropriate broadcast speaking manner. The student will be able to:
07.01	Identify and correct verbal deficiencies in self and others.
07.02	Demonstrate the ability to breathe properly, control voice projection, volume, and resonance, and vary tone, pitch and pacing.
07.03	Articulate and pronounce words according to accepted standards.
07.04	Read aloud in a professional broadcast manner.

07.05	Outline the qualifications and requirements of an announcer.
07.06	Demonstrate development of the skills related to announcing, the various techniques of delivery and procedures according to accepted standards.

Course Number: RTT0523 Occupational Completion Point: B Audio Equipment Technician – 300 Hours	
08.0	Demonstrate the set up and configuration of a computer for audio applications. The student will be able to:
08.01	Install basic peripheral devices related to audio programs.
08.02	Install and configure software related to audio programs.
08.03	Demonstrate basic knowledge of computer system requirements.
08.04	Demonstrate basic knowledge of installing plug-ins or additional audio source material such as beats and/or samples.
08.05	Understand the signal flow of a digital audio workstation.
09.0	Understand the operation of basic reproduction, reinforcement and recording audio equipment. The student will be able to:
09.01	Assess the audio technology needs of a music production (pre-production).
09.02	Evaluate available audio resources.
09.03	Select and configure appropriate hardware and software.
10.0	Demonstrate understanding of the requirements for set up and operation of a sound reinforcement system. The student will be able to:
10.01	Demonstrate basic understanding of audio electronics (e.g., head room, biasing, distortion, equalization, frequency response).
10.02	Demonstrate basic understanding of acoustics.
10.03	Demonstrate knowledge of the principles of operation of analog/digital devices (block diagram).
10.04	Demonstrate basic understanding of audio signal flow in an analog or digital chain.
10.05	Formulate strategies for audio reinforcement of music productions.
10.06	Evaluate performance needs.
10.07	Evaluate technical needs as appropriate to given spaces.

10.08	Configure a sound reinforcement system to meet performance needs.
10.09	Analyze various audio qualities to achieve the proper sound mix.
10.10	Perform transactions with audio suppliers.
10.11	Design a plot for proper microphone and speaker selection and placement.
10.12	Evaluate the quality of a multi-track recording.
10.13	Interpret audio needs for the end user.
10.14	Supervise equipment operator.
10.15	Evaluate the quality of the final mix to industry standards.
11.0	Demonstrate the application of control protocols and their relationship to equipment used in the music industry. The student will be able to:
11.01	Demonstrate an understanding of MIDI.
11.02	Utilize a computer and multiple MIDI instruments.
11.03	Record a single-sound track, add multiple-sound tracks, and change MIDI voices using the appropriate software.
12.0	Demonstrate basic operation of a digital audio workstation. The student will be able to:
12.01	Demonstrate knowledge of the digital audio workstation interface.
12.02	Create and arrange a multi-track project.
12.03	Create interest and effect using editing techniques
12.04	Design and edit audio using a waveform editor.
12.05	Record audio directly to the digital audio workstation.
12.06	Demonstrate knowledge of mixing audio.
12.07	Demonstrate skill in using audio effects and plug-ins.
12.08	Prepare an audio project for finishing and final mix down.
12.09	Transfer audio files between various audio software applications.
12.10	Record finished audio to tape or compact disc and/or publish to a webpage.

13.0	Demonstrate basic digital production skills. The student will be able to:
13.01	Demonstrate understanding of digital audio storage concepts and digital storage media.
13.02	Demonstrate knowledge of and the ability to operate digital recording decks and other digital storage devices.
13.03	Demonstrate a working familiarity with and understanding of the function and operation of digital audio workstations.
13.04	Demonstrate the ability to edit, cut, erase, and insert sound utilizing various digital production techniques.

Course Number: RTT0524
Occupational Completion Point: C
Sound Engineering Technician – 300 Hours

09.0	Understand the operation of basic reproduction, reinforcement and recording audio equipment. The student will be able to:
09.04	Formulate strategies for producing multi-track recordings.
09.05	Evaluate production needs for microphone applications.
09.06	Demonstrate proficiency with multi-track, multi-channel mixing consoles.
09.07	Formulate strategies for digital editing.
09.08	Configure audio recording systems for optimal and appropriate use of signal processing equipment.
09.09	Engineer a recording session and prepare appropriate documentation.
09.10	Mix multi-track recordings.
09.11	Configure audio equipment for optimal musical mix.
09.12	Create a mixing plan.
09.13	Evaluate the quality of multi-track recordings.
09.14	Interpret audio needs for the end user.
09.15	Supervise equipment operators.
09.16	Evaluate the quality of the final mix according to industry standards.
11.0	Demonstrate the application of control protocols and their relationship to equipment used in the music industry. The student will be able to:

11.04	Demonstrate proficiency in using MIDI instruments to record sounds using a digital sampler.
11.05	Demonstrate an understanding of MIDI and other control protocols in the recording studio.
11.06	Configure MIDI and other show control devices in the studio or live environment.
11.07	Troubleshoot MIDI and control communication problems.
14.0	Demonstrate advanced digital production skills. The student will be able to:
14.01	Demonstrate knowledge of and the ability to perform digital transfers of audio information between digital and analog production environments.
14.02	Demonstrate a working familiarity with and understanding of the function and operation of multi-track digital audio workstations.
14.03	Demonstrate an ability to edit, cut, erase, and insert sound utilizing various digital production techniques in the multi-track digital environment.

Course Number: RTT0527
Occupational Completion Point: D
Audio Broadcast Technician – 300 Hours

14.0	Demonstrate advanced digital production skills. The student will be able to:
14.04	Demonstrate the knowledge and ability to connect the hardware for a digital audio workstation, an audio console, and various recording equipment together using proper signal flow techniques, cables and connectors.
14.05	Demonstrate the knowledge and ability to record, edit and encode a surround-sound digital mix for use on DVD or SACD.
14.06	Demonstrate the knowledge and ability to encode audio for use on the web, digital distribution, use in video and animation.
14.07	Demonstrate the knowledge and ability to create album cover art for CD and web distribution.
14.08	Demonstrate the knowledge and ability to create a blog page to post Internet broadcasts.
14.09	Demonstrate understanding of RSS feeds to be used to distribute digital content to Internet subscribers and to build an audience.
14.10	Formulate a marketing strategy for Internet broadcast, independent CD release, or Internet distribution.
15.0	Perform transactions with music industry suppliers. The student will be able to:
15.01	Research sources for necessary equipment, supplies and educational materials.
15.02	Differentiate the levels of quality in the hierarchy of manufacturers, distributors and suppliers.
15.03	Evaluate purchasing agreements including bids, warranties, and maintenance contracts.

15.04	Evaluate the technical specifications of audio related products.
15.05	Execute the purchase of audio equipment, supplies, and educational materials.
16.0	Plan, coordinate and manage an audio broadcast or album. The student will be able to:
16.01	Define the program format and market demographics.
16.02	Present a project proposal with script or lyrics.
16.03	Develop a production schedule.
16.04	Create a plan to acquire all required production resources and talent.
16.05	Manage crew and staff during pre-production and production.
16.06	Determine post-production requirements.
16.07	Determine post-production activities.
16.08	Conduct client approval reviews of the project.
16.09	Archive and manage finished assets and originals.
16.10	Oversee broadcast/Internet distribution or physical distribution to the market.
16.11	Explain various techniques for program or segment promotion.
17.0	Demonstrate knowledge of legal issues related to copyright. The student will be able to:
17.01	Define Federal Communications Commission (FCC) regulations pertaining to the broadcasting industry.
17.02	Define the laws and regulations pertaining to the ownership and control of media assets, license allocation, measurement and records, political broadcasts and lottery laws.
17.03	Define the laws and practices underlying rights, releases and permits.
17.04	Define the laws and practices underlying slander, libel, free speech and “truth in advertising” issues.
17.05	Define the laws and practices underlying indecent programming, obscenity and censorship issues.
17.06	Define the laws and practices underlying contract, labor, copyright and insurance/liability issues.
18.0	Demonstrate knowledge of current and future digital audio networking standards. The student will be able to:
18.01	Demonstrate the ability to plan and configure a basic digital audio network; include Audio over Ethernet (AoE).

18.02	Demonstrate knowledge of digital audio networking options (e.g., Audinate's DANTE).
18.03	Demonstrate knowledge of networking and processing platforms for real-time professional audio applications (e.g., SoundGrid by Waves Audio).
18.04	Demonstrate knowledge of Multichannel Audio Digital Interface (MADI).
18.05	Demonstrate knowledge of AES50.
19.0	Demonstrate professionalism and employability skills. The student will be able to:
19.01	Demonstrate punctuality and promptness.
19.02	Demonstrate a strong work ethic and exemplify passion and motivation.
19.03	Demonstrate flexibility and teamwork when working in groups.
19.04	Demonstrate the ability to interact with staff, vendors, and performers in a professional manner.
19.05	Demonstrate knowledge of business processes and procedures.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Basic Skills

In Career Certificate Programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Computation (Mathematics) and Communications (Reading and Language Arts). These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02, Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01, F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College System Institution must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91, F.S.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Program Title: 3-D Animation Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Career Certificate Program		
Program Number	I480200	
CIP Number	0610030400	
Grade Level	30, 31	
Program Length	1050 hours	
Teacher Certification	Refer to the Program Structure section.	
CTSO	SkillsUSA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level	Computation (Mathematics): 10	Communications (Reading and Language Arts): 10

Purpose

The purpose of this program is to prepare students for employment in 3-D Animation and related career fields.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, practical experiences in 3-D Animation design and production. Specialized skills such as video editing, audio production, and the utilization of animation and authoring software are used to produce a variety of multimedia productions.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of four occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	DIG0060	3-D Animation Production Assistant	BUS ED 1 @ 2 COMM ART @7 7G COMPU SCI 6 ELECT DP @7 %G TEC ELEC \$7 G TV PRO TEC @7 7G	150 hours
B	DIG0061	Modeler		300 hours
C	DIG0062	Texture Artist/Rigger		300 hours
D	DIG0063	Animation/Motion Capture Technician		300 hours

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Understand the history of 3-D Animation.
- 02.0 Understand the production process.
- 03.0 Understand intellectual property rights, copyright laws and plagiarism relative to creative assets.
- 04.0 Demonstrate proficiency in computer skills.
- 05.0 Demonstrate knowledge of photo editing software.
- 06.0 Demonstrate knowledge of production writing as it relates to 3-D animation.
- 07.0 Demonstrate knowledge of art direction.
- 08.0 Demonstrate knowledge of character development.
- 09.0 Demonstrate knowledge of storyboarding.
- 10.0 Demonstrate knowledge of animatics.
- 11.0 Demonstrate knowledge of video-editing software.
- 12.0 Demonstrate appropriate voice acting skills.
- 13.0 Demonstrate basic audio production.
- 14.0 Demonstrate knowledge of audio editing software.
- 15.0 Demonstrate knowledge of funding presentations and pitches.
- 16.0 Understand modeling in relation to the production process.
- 17.0 Demonstrate knowledge of animation principles as they relate to modeling.
- 18.0 Demonstrate knowledge of modeling principles.
- 19.0 Demonstrate knowledge of 3-D Animation software.
- 20.0 Demonstrate knowledge of 3-D Animation software navigation.
- 21.0 Demonstrate knowledge of NURBS modeling.
- 22.0 Demonstrate knowledge of polygonal modeling.
- 23.0 Demonstrate knowledge of basic lighting.
- 24.0 Demonstrate knowledge of basic materials and textures.
- 25.0 Demonstrate knowledge of basic animation.
- 26.0 Demonstrate knowledge of basic character setup.
- 27.0 Demonstrate knowledge of basic 3-D rendering.
- 28.0 Understand the role of a texture artist in relation to the production process.
- 29.0 Demonstrate knowledge color theory.
- 30.0 Demonstrate knowledge of advanced material and texture creation.
- 31.0 Demonstrate knowledge of cloth and hair.
- 32.0 Demonstrate knowledge of cell-shading.
- 33.0 Demonstrate knowledge of texture baking.
- 34.0 Demonstrate knowledge of texture maps.
- 35.0 Demonstrate knowledge of 3-D painting software.
- 36.0 Demonstrate knowledge of rigging.

- 37.0 Demonstrate knowledge of morphing.
- 38.0 Demonstrate knowledge of facial animation.
- 39.0 Demonstrate knowledge of advanced rigging.
- 40.0 Demonstrate knowledge of motion capture systems.
- 41.0 Demonstrate knowledge of motion capture system setup.
- 42.0 Demonstrate knowledge of motion capture preproduction.
- 43.0 Demonstrate knowledge of motion capture production.
- 44.0 Demonstrate knowledge of motion capture post-production.
- 45.0 Understand the role of a 3-D animator in relation to the production process.
- 46.0 Demonstrate knowledge of advanced animation.
- 47.0 Demonstrate knowledge of motion graphics.
- 48.0 Demonstrate knowledge of animation behaviors and scripting.
- 49.0 Demonstrate knowledge of particle systems.
- 50.0 Demonstrate knowledge of advanced audio production.
- 51.0 Demonstrate knowledge of dynamics (physics).
- 52.0 Demonstrate knowledge of distributed rendering.
- 53.0 Demonstrate knowledge of video compositing software.
- 54.0 Demonstrate knowledge of post-production.
- 55.0 Develop professional portfolio of work.

**Florida Department of Education
Student Performance Standards**

Program Title: 3-D Animation Technology
Career Certificate Program Number: I480200

Course Number: DIG0060
Occupational Completion Point: A
3-D Animation Production Assistant – 150 Hours

01.0 Understand the history of 3-D Animation. The student will be able to:

01.01 Understand the history of animation (e.g., 2D, cell, stop motion).

01.02 Understand the history of computer animation.

01.03 Identify the advantages and limitations of computer animation.

01.04 Identify industry and business uses of 3-D animation.

01.05 Identify 3-D assets and associated end products.

02.0 Understand the production process. The student will be able to:

02.01 Identify the job titles associated with animation production.

02.02 Identify the various tools and equipment used to produce 3-D animation.

02.03 Understand speed and efficiency concepts.

02.04 Understand a production pipeline.

02.05 Identify the departments of an animation studio.

02.06 Understand the interrelationships between departments.

02.07 Understand basic communication concepts (e.g., verbal, memos, and paperwork).

02.08 Identify the stages of production.

02.09 Understand studio terms and jargon.

02.10 Create and organize production paperwork into production bibles (guidebooks) and prepare for presentations.

03.0 Understand intellectual property rights, copyright laws and plagiarism relative to creative assets. The student will be able to:

03.01	Understand the limits and expectations of copyright protection.
03.02	Understand the concepts of “Fair Use” and “Fair Dealing.”
03.03	Understand the transfer and licensing of creative works.
03.04	Understand the use of “exclusive rights” to intellectual creations.
03.05	Demonstrate the use of digital watermarking.
04.0	Demonstrate proficiency in computer skills. The student will be able to:
04.01	Identify the computer components relevant to 3-D Animation.
04.02	Demonstrate understanding of computer performance specifications.
04.03	Compare and contrast business machines and workstations.
04.04	Demonstrate best practices of computer safety and ergonomics.
04.05	Demonstrate understanding of operating systems.
04.06	Perform storage management operations.
05.0	Demonstrate knowledge of photo editing software. The student will be able to:
05.01	Demonstrate understanding of file formats and storage options.
05.02	Identify parts of the software interface.
05.03	Demonstrate the ability to use each of the basic tool sets.
05.04	Demonstrate the ability to import, export and save images.
05.05	Demonstrate understanding of layers and channels.
05.06	Demonstrate understanding of filters, effects and plug-ins.
05.07	Demonstrate understanding of file presets.
05.08	Demonstrate the ability to select portions of an image for manipulation.
05.09	Demonstrate the ability to transform selections and images (e.g., crop, scale).
05.10	Demonstrate the ability to color-correct images (e.g., brightness, hue, contrast).

05.11	Demonstrate the ability to use brushes for image creation and correction.
05.12	Understand non-destructive and destructive operations.
05.13	Demonstrate the ability to import, paint and export 3-D objects.
05.14	Demonstrate the basic use of video in photo-editing software.
06.0	Demonstrate knowledge of production writing as it relates to 3-D animation. The student will be able to:
06.01	Understand the job of a scriptwriter.
06.02	Identify target audiences, markets, and demographics.
06.03	Identify the elements of a script.
06.04	Develop the intended message of a script.
06.05	Demonstrate the ability to write a treatment.
06.06	Demonstrate the ability to write a professionally formatted script.
06.07	Identify the genre of a story.
06.08	Define the characters and setting for a story.
06.09	Demonstrate the ability to breakdown a script into production elements (e.g., cast and props).
07.0	Demonstrate knowledge of art direction. The student will be able to:
07.01	Develop the overall visual appearance of an animation.
07.02	Demonstrate the ability to create moods with style.
07.03	Determine the geographic location and time period of a story.
07.04	Understand the importance of art direction as it pertains to the intended message.
07.05	Understand the use of color in art direction.
07.06	Document the technical aspects of art direction.
07.07	Perform assignments in a professional manner and according to industry standards.
08.0	Demonstrate knowledge of character development. The student will be able to:

08.01	Demonstrate an understanding of character profiles.
08.02	Demonstrate the ability to develop character résumés/profiles.
08.03	Develop the look and design for a character that reflects the art direction.
08.04	Understand the technical challenges/limitations of a character.
09.0	Demonstrate knowledge of storyboarding. The student will be able to:
09.01	Demonstrate understanding of visual storytelling and how storyboards are used during production.
09.02	Identify common aspect ratios and demonstrate how to calculate ratios.
09.03	Demonstrate understanding of camera framing and camera movement.
09.04	Develop a visual style using art direction.
09.05	Break down a script into the various camera shots and character actions.
09.06	Demonstrate understanding of perspective and depth of field.
09.07	Demonstrate knowledge of lighting and color use.
09.08	Demonstrate the ability to sketch a storyboard and characters.
09.09	Demonstrate the ability to use storyboarding software or illustration software.
10.0	Demonstrate knowledge of animatics. The student will be able to:
10.01	Demonstrate understanding of animatics and how they are used during production.
10.02	Identify the different types of animatics.
10.03	Demonstrate understanding of shot timing.
10.04	Break down a script into the various camera shots and character actions.
10.05	Understand the concept of a working print.
11.0	Demonstrate knowledge of video-editing software. The student will be able to:
11.01	Demonstrate understanding of file formats and storage options.
11.02	Identify parts of the software interface.

11.03	Demonstrate the ability to use each of the basic tool sets.
11.04	Demonstrate the ability to import, export and save video.
11.05	Demonstrate understanding of layers and compositing.
11.06	Demonstrate understanding of filters, effects and plug-ins.
11.07	Demonstrate understanding of file presets.
11.08	Demonstrate understanding of rendering processes.
11.09	Demonstrate the ability to transform video (e.g., crop, scale).
11.10	Demonstrate the ability to color-correct images (e.g., brightness, hue, contrast).
11.11	Demonstrate the ability to use brushes for image creation and correction.
11.12	Understand non-destructive and destructive operations.
11.13	Demonstrate the compositing integration of rendered 3-D animation with video.
12.0	Demonstrate appropriate voice acting skills. The student will be able to:
12.01	Demonstrate an understanding of how to mark a script for voice-over (VO).
12.02	Demonstrate the ability to read aloud in a professional manner.
12.03	Demonstrate an understanding of the use of phonemes and facial morphs for lip-sync animation.
12.04	Understand the concept of voice acting and playing a role while speaking.
12.05	Perform assignments in a professional manner and according to industry standards.
13.0	Demonstrate basic audio production. The student will be able to:
13.01	Understand the concept and mechanics of recording environment set-up; demonstrate the ability to set up a recording environment, if available.
13.02	Demonstrate understanding of digital audio recording hardware.
13.03	Demonstrate understanding of the proper use of microphones.
13.04	Demonstrate knowledge of audio codecs and media.
13.05	Understand the history of Foley and sound effects production.

14.0	Demonstrate knowledge of audio editing software. The student will be able to:
14.01	Demonstrate understanding of file formats and storage options.
14.02	Identify parts of the software interface.
14.03	Demonstrate the ability to use each of the basic tool sets.
14.04	Demonstrate the ability to import, export and save audio.
14.05	Demonstrate the ability to utilize multiple tracks.
14.06	Demonstrate understanding of filters, effects and plug-ins.
14.07	Demonstrate understanding of file presets.
14.08	Demonstrate understanding of audio rendering processes.
14.09	Demonstrate the ability to edit, cut, and delete.
14.10	Understand non-destructive and destructive operations.
15.0	Demonstrate knowledge of funding presentations and pitches. The student will be able to:
15.01	Understand the network associated with product distribution.
15.02	Identify the job titles and roles of the distributors.
15.03	Identify potential markets, target audiences, and products.
15.04	Effectively convey a message by utilizing the available presentation software and/or other methods.
15.05	Develop a script of talking points.
15.06	Effectively communicate a message or pitch.

Course Number: DIG0061
Occupational Completion Point: B
Modeler – 300 Hours

16.0	Understand modeling in relation to the production process. The student will be able to:
16.01	Define modeling as a process.

16.02	Define the role of a modeler.
16.03	Identify job titles associated with a modeler.
16.04	Identify modeling in the production pipeline.
17.0	Demonstrate knowledge of animation principles as they relate to modeling. The student will be able to:
17.01	Demonstrate an understanding of the principle of squash and stretch.
17.02	Demonstrate an understanding of the principle of anticipation.
17.03	Demonstrate an understanding of the principle of staging.
17.04	Demonstrate an understanding of the principles of straight ahead action and pose-to-pose.
17.05	Demonstrate an understanding of the principles of follow through and overlapping action.
17.06	Demonstrate an understanding of the principles of ease in / ease out.
17.07	Demonstrate an understanding of the principle of arcs.
17.08	Demonstrate an understanding of the principle of secondary action.
17.09	Demonstrate an understanding of the principle of timing.
17.10	Demonstrate an understanding of the principle of exaggeration.
17.11	Demonstrate an understanding of the principle of solid drawing.
17.12	Demonstrate an understanding of the principle of appeal.
18.0	Demonstrate knowledge of modeling principles. The student will be able to:
18.01	Understand 3-D construction theory.
18.02	Demonstrate understanding of primitives and parametric modeling.
18.03	Demonstrate an understanding of NURBS, splines, and polygonal modeling.
18.04	Demonstrate the ability to use reference images and files while modeling.
19.0	Demonstrate knowledge of 3-D Animation software. The student will be able to:
19.01	Identify the computer requirements for 3-D animation software.

19.02	Compare and contrast available 3-D animation software options.
19.03	Identify file formats and protocols.
19.04	Demonstrate an understanding of naming conventions.
19.05	Develop a software and file backup plan.
19.06	Identify common icons within the software.
19.07	Demonstrate the use of keyboard shortcuts.
19.08	Demonstrate the use of a three-button mouse.
20.0	Demonstrate knowledge of 3-D Animation software navigation. The student will be able to:
20.01	Identify the main windows of a 3-D animation software program.
20.02	Identify common window layouts.
20.03	Identify tool icons within the software.
20.04	Understand the significance of keyboard shortcut use and efficiency.
20.05	Demonstrate the use of keyboard shortcuts.
20.06	Demonstrate an understanding of the Euclidean Geometry Model (x-y-z coordinate system).
20.07	Demonstrate an understanding of attribute managers.
20.08	Demonstrate an understanding of layers.
20.09	Navigate the modeling window using pan, rotate, and zoom controls.
20.10	Demonstrate knowledge of selection tools (e.g., lasso, loop).
20.11	Utilize wireframe, Gouraud shading, lines, and boxes modes.
20.12	Demonstrate use of selection sets.
20.13	Undo and redo an action within the program.
20.14	Locate and utilize the help menu system.
21.0	Demonstrate knowledge of NURBS modeling. The student will be able to:

21.01	Demonstrate an understanding of points, vertices, edges, and polygons.
21.02	Demonstrate an understanding of poly-count.
21.03	Demonstrate an understanding of primitives.
21.04	Define <i>parametric primitives</i> .
21.05	Locate the properties, attributes, and coordinates of an object.
21.06	Demonstrate understanding of non-uniform rational basis splines (NURBS).
21.07	Demonstrate understanding of splines and generators (e.g., extrude, lathe, sweep).
21.08	Understand the use of hierarchy.
21.09	Demonstrate an understanding of Boolean Objects.
21.10	Demonstrate an understanding of Null Objects.
21.11	Demonstrate an understanding of scene management (hiding and un-hiding).
21.12	Demonstrate an understanding of arrays.
22.0	Demonstrate knowledge of polygonal modeling. The student will be able to:
22.01	Demonstrate an understanding of N-gons.
22.02	Demonstrate an understanding of subdivision.
22.03	Demonstrate basic polygon editing and manipulation.
22.04	Demonstrate knowledge of point management (location).
22.05	Demonstrate the ability to create polygonal models from points.
22.06	Demonstrate an understanding of cutting/division tools.
22.07	Demonstrate an understanding of extruders.
22.08	Demonstrate an understanding of symmetry.
22.09	Demonstrate an understanding of hyper-NURBS.
22.10	Demonstrate an understanding of basic deformers (e.g., bend, twist, and melt).

23.0	Demonstrate knowledge of basic lighting. The student will be able to:
23.01	Compare and contrast real lighting with 3-D lighting.
23.02	Demonstrate an understanding 3-point lighting.
23.03	Demonstrate an understanding of low-key and high-key lighting.
23.04	Use “include/exclude” commands to target light on objects.
23.05	Demonstrate use of negative intensity.
23.06	Demonstrate an understanding of the hierarchy of lights.
23.07	Demonstrate an understanding of area lights.
23.08	Demonstrate an understanding of volumetric lights.
23.09	Demonstrate an understanding of radiosity/global illumination.
23.10	Demonstrate an understanding of ambient occlusion.
23.11	Demonstrate an understanding of HDRI lighting.
23.12	Demonstrate an understanding of how light settings will affect render times.
24.0	Demonstrate knowledge of basic materials and textures. The student will be able to:
24.01	Demonstrate an understanding of material and texture storage.
24.02	Apply textures to an object.
24.03	Demonstrate an understanding of procedural shaders.
24.04	Demonstrate an understanding of channels.
24.05	Adjust the transparency, luminance, and reflection of a material.
24.06	Demonstrate an understanding of displacement maps.
24.07	Demonstrate an understanding of bump maps.
24.08	Demonstrate knowledge of material projections.
24.09	Demonstrate an understanding of UV mapping.

24.10	Demonstrate an understanding of 3-D painting.
24.11	Understand how light affects the look of materials.
24.12	Understand how camera angles affect the look of materials.
25.0	Demonstrate knowledge of basic animation. The student will be able to:
25.01	Apply animation principles to object animation.
25.02	Demonstrate an understanding of animation timelines.
25.03	Demonstrate an understanding of key framing.
25.04	Demonstrate an understanding of F-curves.
25.05	Record and edit key frames.
25.06	Demonstrate the use of controllers.
25.07	Demonstrate an understanding of ease in/out.
25.08	Demonstrate an understanding of camera animation.
25.09	Render low-quality reference animation.
26.0	Demonstrate knowledge of basic character setup. The student will be able to:
26.01	Compare and contrast rigging approaches and styles.
26.02	Demonstrate an understanding of the rig as it relates to the model.
26.03	Demonstrate an understanding of mesh morphing.
26.04	Demonstrate an understanding of skeletal systems.
26.05	Demonstrate an understanding of bones and joints.
26.06	Demonstrate an understanding of bone/joint hierarchies and naming conventions.
26.07	Demonstrate an understanding of controllers.
26.08	Demonstrate an understanding of spline inverse kinematics (IK).
26.09	Demonstrate an understanding of kinematic chains.

26.10	Demonstrate an understanding of skins and weights.
26.11	Demonstrate the ability to create a visual selector for the rig.
27.0	Demonstrate knowledge of basic 3-D rendering. The student will be able to:
27.01	Demonstrate an understanding of processor, hardware, and software rendering techniques.
27.02	Determine the final render format.
27.03	Demonstrate an understanding of basic render settings.
27.04	Demonstrate understanding of title safe, action safe, and render safe.
27.05	Select the range of frames to be rendered.
27.06	Demonstrate an understanding of global illumination (radiosity) render settings.
27.07	Demonstrate an understanding of anti-aliasing.
27.08	Demonstrate an understanding of net rendering.
27.09	Demonstrate an understanding of alpha channels.
27.10	Render animation as a movie or image sequence.
27.11	Compile image sequences into a movie.
27.12	Demonstrate an understanding of the benefits, purpose and workflow of multi-pass rendering.
27.13	Demonstrate an understanding of the batch render process.

Course Number: DIG0062
Occupational Completion Point: C
Texture Artist/Rigger – 300 Hours

28.0	Understand the role of a texture artist in relation to the production process. The student will be able to:
28.01	Define texturing as a process.
28.02	Define the role of a texture artist.
28.03	Identify job titles associated with texture artist.

28.04	Identify texture creation in the production pipeline.
28.05	Demonstrate knowledge of the differences between textures and shaders.
28.06	Demonstrate an understanding of texture projection methods.
28.07	Demonstrate the application of UV coordinates to texture mapping.
28.08	Demonstrate the round-trip integration of photo-editing software and a 3-D host for texture development.
28.09	Demonstrate how to link texture and shade properties to object movement via either visual or scripted programming relationships.
29.0	Demonstrate knowledge color theory. The student will be able to:
29.01	Demonstrate an understanding of additive and subtractive color mixtures.
29.02	Demonstrate an understanding of hue, saturation, and brightness.
29.03	Demonstrate an understanding of complementary colors and composition.
29.04	Identify warm and cool colors.
29.05	Demonstrate an understanding of the psychology of color influence.
30.0	Demonstrate knowledge of advanced material and texture creation. The student will be able to:
30.01	Determine required materials and textures needed for a model based on production design sheets and reference images.
30.02	Determine the material and texture properties to create.
30.03	Select an appropriate style (e.g., realistic, hyper-real, simplified).
30.04	Determine appropriate color pallets to use.
30.05	Determine the appropriate image resolution and file format for use in 3-D application.
30.06	Demonstrate knowledge of material and texture creation techniques and approaches.
30.07	Identify the tools and software used to create materials and textures.
30.08	Acquire raw texture images from digital stills or scans.
30.09	Create tiled textures using photo-editing software.
31.0	Demonstrate knowledge of cloth and hair. The student will be able to:

31.01	Determine cloth or hair requirements based on production design sheets and reference images.
31.02	Define the physical properties associated with cloth and hair.
31.03	Demonstrate knowledge of hair and cloth toolsets.
31.04	Determine appropriate materials to use with hair.
31.05	Demonstrate knowledge of hair manipulation and management.
31.06	Demonstrate knowledge of hair and cloth lighting techniques.
31.07	Demonstrate knowledge of the dynamic simulation parameters required to make cloth and hair perform to production requirements.
31.08	Demonstrate knowledge of how cloth and hair interact with other objects.
32.0	Demonstrate knowledge of cell-shading. The student will be able to:
32.01	Understand the history of cell-shading.
32.02	Determine the appropriate use of cell shading techniques.
32.03	Determine cell-shading requirements needed for a model based on production design sheets and reference images.
32.04	Demonstrate knowledge of lighting techniques used with cell-shading.
32.05	Determine appropriate render settings for cell-shading.
32.06	Determine the appropriate materials and shaders to use with cell-shading.
33.0	Demonstrate knowledge of texture baking. The student will be able to:
33.01	Describe the advantages of baking textures.
33.02	Determine the appropriate use of baking textures.
33.03	Demonstrate texture-baking procedures.
33.04	Export models with baked textures.
33.05	Determine the appropriate render settings needed for baked textures.
34.0	Demonstrate knowledge of texture maps. The student will be able to:
34.01	Define the properties of displacement, bump, and normal maps.

34.02	Determine the appropriate texture mapping requirements for a model based on production design sheets and reference images.
34.03	Demonstrate knowledge of displacement map placement tools and techniques.
34.04	Demonstrate knowledge of bump map tools and techniques.
34.05	Demonstrate knowledge of normal map tools and techniques.
35.0	Demonstrate knowledge of 3-D painting software. The student will be able to:
35.01	Identify available 3-D paint programs.
35.02	Demonstrate knowledge of UV mapping tools.
35.03	Prepare a UV map for export for use with photo-editing software.
35.04	Demonstrate knowledge of 3-D painting tools within 3-D animation software.
35.05	Apply a painted image map to a model.
36.0	Demonstrate knowledge of rigging. The student will be able to:
36.01	Define rigging as a process.
36.02	Define the role of a rigger.
36.03	Identify the job titles associated with a rigger.
36.04	Identify rigging creation in the production pipeline.
36.05	Demonstrate knowledge of forward kinematics versus inverse kinematics
36.06	Demonstrate an understanding of the joint weighting process
36.07	Demonstrate the proper hierarchical structure of goals and nulls to construct effective control objects.
37.0	Demonstrate knowledge of morphing. The student will be able to:
37.01	Define morphing as it relates to animation.
37.02	Demonstrate knowledge of morphing tools.
37.03	Demonstrate knowledge of model meshes.
37.04	Define the model area to be morphed.

37.05	Create morph target points.
37.06	Demonstrate knowledge of controllers and relational morphs (driver, driven).
37.07	Demonstrate knowledge of rotational morphs.
37.08	Demonstrate knowledge of key frame animation and morph tags.
38.0	Demonstrate knowledge of facial animation. The student will be able to:
38.01	Demonstrate knowledge of animation-related facial morphing techniques.
38.02	Demonstrate knowledge of phoneme-viseme principles for lip synchronization.
38.03	Apply facial expression animation to complement lip synchronization.
38.04	Break down a script into a sound chart.
38.05	Create a set of controls for each sound and expression.
39.0	Demonstrate knowledge of advanced rigging. The student will be able to:
39.01	Determine uses for advanced rigging.
39.02	Demonstrate knowledge of advanced rigging tools.
39.03	Prepare a rigged model for animation.
39.04	Demonstrate knowledge of advanced scripting relative to rigging.
39.05	Create complex rigs for greater precision and control.
39.06	Demonstrate knowledge of deformers.
39.07	Demonstrate knowledge of motion capture rigging.
39.08	Determine necessary joint/bone hierarchy for motion capture rigging.
39.09	Apply pre-captured motion data to a motion capture rig.

Course Number: DIG0063
Occupational Completion Point: D
Animator/Motion Capture Technician – 300 Hours

40.0 Demonstrate knowledge of motion capture systems. The student will be able to:

40.01 Demonstrate knowledge of the history of motion capture.

40.02 Demonstrate an awareness of emerging technologies in the industry.

40.03 Demonstrate understanding of motion capture for 3-D production.

40.04 Define the role of a motion capture technician.

40.05 Demonstrate understanding of optical, magnetic, and mechanical systems.

40.06 Demonstrate understanding of software-based or simulated motion capture systems.

40.07 Demonstrate understanding of the motion capture production pipeline.

41.0 Demonstrate knowledge of motion capture system setup. The student will be able to:

41.01 Determine the capture volume based on available space and cameras.

41.02 Demonstrate understanding of XYZ perimeters in lab orientation.

41.03 Demonstrate understanding of motion capture computer hardware requirements and software security dongles.

41.04 Demonstrate understanding of the tools and instruments specific to motion capture.

41.05 Demonstrate the ability to create individual optical markers and arrays using optical tape and Velcro strapping.

42.0 Demonstrate knowledge of motion capture preproduction. The student will be able to:

42.01 Identify the use of motion capture as it relates to a production plan.

42.02 Mark a script and shot list for motion capture.

42.03 Understand the role of motion capture talent/actors.

42.04 Rehearse the performance with talent.

42.05 Identify the necessary captured performance props.

42.06 Determine real-time video needs.

43.0	Understand the role of a 3-D animator in relation to the production process. The student will be able to:
43.01	Define animation as a process.
43.02	Define the role of an animator.
43.03	Identify job titles associated with an animator.
43.04	Identify animation in the production pipeline.
44.0	Demonstrate knowledge of advanced animation. The student will be able to:
44.01	Demonstrate knowledge of how nondestructive deformers affect animation.
44.02	Demonstrate knowledge of how muscle deformers integrate with a character rig.
44.03	Demonstrate knowledge of transforms and animation transfers from one object or object hierarchy to another.
45.0	Demonstrate knowledge of motion graphics. The student will be able to:
45.01	Demonstrate knowledge of 3-D animated motion graphics.
45.02	Demonstrate knowledge of motion graphics tools and techniques.
45.03	Demonstrate knowledge of integrated dynamics to simulate gravitational and collision effects.
45.04	Demonstrate the integration of standard animation techniques to drive motion graphics elements based on node-based visual programming.
45.05	Demonstrate an applied working knowledge of motion graphics for broadcast application in TV show opens and commercials.
46.0	Demonstrate knowledge of animation behaviors and scripting. The student will be able to:
46.01	Determine appropriate use of behaviors and automated animation.
46.02	Demonstrate the ability to apply behavior to an object.
46.03	Demonstrate the ability to apply multiple behaviors using node or visual systems.
46.04	Demonstrate the ability to use object-oriented programming language to create scripts.
46.05	Demonstrate understanding of the scripting console and commands.
47.0	Demonstrate knowledge of particle systems. The student will be able to:
47.01	Demonstrate understanding of particle emitters.

47.02	Prepare objects to be emitted.
47.03	Determine the direction of emission and coordinate.
47.04	Determine birthrate and lifetime.
47.05	Determine scale, speed, and rotation.
47.06	Demonstrate the ability to use animated particles
47.07	Demonstrate the ability to create smoke, fire, and sparks using emitters and materials.
47.08	Apply dynamics to an emitter, including wind/gravity.
47.09	Demonstrate use of key frame animation or triggers.
48.0	Demonstrate knowledge of advanced audio production. The student will be able to:
48.01	Edit and export sound effects for use in video-editing software.
48.02	Demonstrate the ability to place audio in 3-D space using 3-D animation software.
49.0	Demonstrate knowledge of dynamics (physics). The student will be able to:
49.01	Demonstrate a basic understanding physics principles (e.g., mass, velocity and collision).
49.02	Determine when to use physics instead of key frame animation.
49.03	Apply physics tools and commands to models in a simulation.
49.04	Demonstrate an understanding of rigid and soft bodies.
49.05	Demonstrate an understanding of forces (e.g., gravity, drag, wind).
49.06	Demonstrate an understanding of collision detection.
50.0	Demonstrate knowledge of video compositing software. The student will be able to:
50.01	Demonstrate understanding of file formats and storage options.
50.02	Identify parts of the software interface.
50.03	Demonstrate the ability to use each of the basic tool sets.
50.04	Demonstrate the ability to import files and videos to be composited.

50.05	Demonstrate understanding of layers and compositing.
50.06	Demonstrate understanding of filters, effects and plug-ins.
50.07	Demonstrate understanding of motion paths.
50.08	Demonstrate understanding of lighting effects.
50.09	Demonstrate understanding of rendering processes.
50.10	Demonstrate the ability to mask video.
50.11	Demonstrate the ability to color-correct video (e.g., brightness, hue, contrast).
50.12	Demonstrate the ability to use vector and color keying tools.
50.13	Demonstrate understanding of particle systems.
50.14	Demonstrate understanding of time correction.
50.15	Demonstrate the ability to export final video to use with video-editing software.
50.16	Demonstrate the ability to prepare the 3-D scene for compositing using alpha channel setting in the 3-D host as well as object buffers that will be assigned video sources in the compositing software.
50.17	Demonstrate the ability to add camera and lighting positions and rotations for use in the compositing software.
51.0	Demonstrate knowledge of post-production. The student will be able to:
51.01	Import composited video into the timeline.
51.02	Import final audio into the timeline.
51.03	Edit video using the animatic as a reference.
51.04	Export video for use in websites, DVDs and other media formats.
51.05	Encode and assemble DVD for distribution.
52.0	Develop a professional portfolio of work. The student will be able to:
52.01	Identify the elements of a professional portfolio and résumé.
52.02	Examine and determine work samples to include in a portfolio and résumé.
52.03	Gather illustrations, audio, video, and work history details to include into portfolio and résumé.

52.04 Understand web-based portfolio distribution.
52.05 Determine formatting for the portfolio and résumé.
52.06 Produce a résumé for final review.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Basic Skills

In Career Certificate Programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Computation (Mathematics) and Communications (Reading and Language Arts). These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02, Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01, F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College System Institution must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91, F.S.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Program Title: Commercial Art Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Career Certificate Program		
Program Number	I480203	
CIP Number	0650040208	
Grade Level	30, 31	
Program Length	1500 hours	
Teacher Certification	Refer to the Program Structure section.	
CTSO	SkillsUSA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level	Computation (Mathematics): 9	Communications (Reading and Language Arts): 9

Purpose

The purpose of this program is to prepare students for employment as artists and related workers, illustrators, and commercial designers.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and the relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, basic art skills, lettering skills, preparation of layouts and illustrations, preparation of camera ready paste-up, and development of specialized skills.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of four occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	GRA0036	Graphic Designer	COMM ART @7 7G GRAPHIC COMM 7G	450 hours
B	GRA0037	Digital Designer		450 hours
C	GRA0038	Print Media Artist		300 hours
D	GRA0039	Web Designer		300 hours

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate proficiency in the elements and principles of design.
- 02.0 Demonstrate proficiency in art and design skills.
- 03.0 Demonstrate an understanding of type design.
- 04.0 Demonstrate proficiency in layout.
- 05.0 Demonstrate proficiency in applied design.
- 06.0 Demonstrate proficiency in graphic art computer skills.
- 07.0 Demonstrate proficiency in graphic production.
- 08.0 Demonstrate an understanding of employability in commercial art and graphic media.
- 09.0 Demonstrate an understanding of entrepreneurship.
- 10.0 Demonstrate proficiency in website planning and the design process.
- 11.0 Develop markup language structures.
- 12.0 Create basic webpages.
- 13.0 Incorporate images and graphical formatting on a webpage.
- 14.0 Incorporate form structures on a webpage.
- 15.0 Describe frame structures and their usage.
- 16.0 Use Cascading Style Sheets (CSS).
- 17.0 Examine web design technologies and techniques.
- 18.0 Describe the process for publishing a website.
- 19.0 Describe how website performance is monitored and analyzed.
- 20.0 Create an informational website.

**Florida Department of Education
Student Performance Standards**

Program Title: Commercial Art Technology
Career Certificate Program Number: I480203

Course Number: GRA0036
Occupational Completion Point: A
Graphic Designer – 450 Hours

01.0 Demonstrate proficiency in the elements and principles of design. The student will be able to:

01.01 Explain proper use and care of tools and equipment.

01.02 Discuss the legal and ethical issues related to graphic design.

01.03 Apply the principles and elements of design.

01.04 Demonstrate a basic understanding of vector drawing programs.

01.05 Demonstrate a basic understanding of photo-editing / photo-manipulation programs.

01.06 Apply color theory (pigment versus light).

01.07 Utilize tones, hues, and values.

01.08 Sketch designs using pencil and ink.

01.09 Mix and apply colors to produce desired hues, tints, and shades.

01.10 Apply color for impact (color psychology) and demonstrate an understanding of color theory.

01.11 Differentiate between line, halftone, duotone, spot, RGB, four-color process, and web-safe colors.

01.12 Demonstrate 2-D design capabilities.

01.13 Demonstrate designs with symmetry and asymmetry.

01.14 Develop grids for traditional and digital layouts for print and web media.

01.15 Create freehand designs and objects for visualization and presentation.

01.16 Demonstrate harmony and contrast of line and shape.

01.17 Demonstrate harmony and contrast of color and tone.

01.18	Demonstrate harmony and contrast of proportion.
01.19	Demonstrate harmony and contrast of texture pattern.
01.20	Demonstrate harmony and contrast of motion.
01.21	Indicate style of layout design appropriate to the target audience.
01.22	Make a collage.
01.23	Begin developing a professional portfolio (to be updated as the student progresses through the program).
01.24	(Optional) Create a sign on poster board.
02.0	Demonstrate proficiency in art and design skills. The student will be able to:
02.01	Explain proper use and care of tools.
02.02	Make computations for centering, spacing, and scaling drawings.
02.03	Draw on various types of media.
02.04	Illustrate using ink, pencil, washes, markers, tempera, watercolor, and paints.
02.05	Demonstrate renderings of different textures using the above listed media.
02.06	Make illustrations using various objects.
02.07	Make a montage illustration.
02.08	Draw a cartoon.
02.09	Interpret information from drawings, prints, and sketches.
02.10	Draw freehand sketches.
02.11	Draw a one-point perspective and a two-point perspective.
02.12	Make corrections to a drawing.
02.13	Develop a glossary of technical terms.
02.14	Analyze an object to determine size, shape, and proportion.
02.15	Draw an oblique drawing.

02.16 Draw an isometric drawing.

Course Number: GRA0037 Occupational Completion Point: B Digital Designer – 450 Hours

03.0 Demonstrate an understanding of type design. The student will be able to:

03.01 Define typographic terms (e.g., <i>leading</i> , <i>kerning</i>).

03.02 Identify and select typographic applications.

03.03 Demonstrate the ability to proofread, to use proofreader's marks, and to run a spell check.

03.04 Explain picas, points, and conversion to inches.

03.05 Explain specification of type and copy fitting.

03.06 Identify and select typographic styles.

03.07 Define basic letter structures.

03.08 Demonstrate mixing of families of type.

03.09 Identify and select lettering styles.

03.10 Determine and select lettering styles for layout sketches.

04.0 Demonstrate proficiency in layout. The student will be able to:

04.01 Identify the parts of a layout.

04.02 Create thumbnail sketches.

04.03 Create roughs and comprehensives from thumbnail sketches.

04.04 Prepare computer roughs from pencil layouts.

04.05 Prepare digital-ready artwork from comprehensives; prepare files that are print-ready and presentation-ready.

04.06 Crop and scale artwork and/or photos for layouts.

04.07 Use adhesives.

04.08	Demonstrate the use of effects or styles.
04.09	Explain layout and color trends.
05.0	Demonstrate proficiency in applied design. The student will be able to:
05.01	Locate and identify resource materials for inspiration; develop a storage or idea bank.
05.02	Design logos.
05.03	Design stationery layouts.
05.04	Design a magazine, book cover, album artwork, and CD cover.
05.05	Design an ad campaign that includes newspapers, magazines, billboards, and television; demonstrate continuity.
05.06	Design a greeting card.
05.07	Design a business card.
05.08	Apply advertising psychology.
05.09	Produce an industrial brochure.
05.10	Design a consumer brochure.
05.11	Construct a package design.
05.12	Produce computer-assisted artwork.
06.0	Demonstrate proficiency in graphic art computer skills. The student will be able to:
06.01	Demonstrate graphic art computer skills using appropriate graphic art programs and hardware.
06.02	Use software and hardware to manipulate and adjust various drawings, photos, and graphic material by computer.
06.03	Produce finished computer projects that reflect current and/or emergent trends in graphic art technology.
06.04	Operate various input devices for computer graphics, such as scanners and cameras.
06.05	Demonstrate proficiency in vector and raster programs.
06.06	(Optional) Make an orthographic drawing using digital software.
06.07	Continue developing a professional portfolio.

Course Number: GRA0038
Occupational Completion Point: C
Print Media Artist – 300 Hours

07.0 Demonstrate proficiency in graphic production. The student will be able to:

07.01 Define the differences in production processes and estimate relative costs.

07.02 Recognize the limitations for printing and dissemination on the Internet.

07.03 Identify and select different printing surfaces (e.g., embossing/debossing, silk lamination, varnish, foil, thermography, die cut, letterpress, and silkscreen).

07.04 Identify and select appropriate printing inks.

07.05 Identify and select finishing processes.

07.06 Identify standard industry material sizes.

07.07 Specify types of folds.

07.08 Make a print on a plotter.

07.09 Demonstrate proficiency in preparing files for output via print media and web content (preflight).

08.0 Demonstrate an understanding of employability in commercial art and graphic media. The student will be able to:

08.01 Identify and create a résumé, references, cover letter, and a thank you letter.

08.02 Relay instructions to others orally and in writing.

08.03 Define and explain graphic design terms.

08.04 Identify common industry questions.

08.05 Make project presentations.

08.06 Explain appropriate interactions with an employer, fellow employees, and customers.

08.07 Identify potential career pathways.

08.08 Understand the importance of networking with other people in the profession.

08.09 Conduct a job search.

08.10	Develop a professional digital portfolio.
09.0	Demonstrate an understanding of entrepreneurship. The student will be able to:
09.01	Define entrepreneurship.
09.02	Describe the importance of entrepreneurship to the American economy.
09.03	List the advantages and disadvantages of business ownership.
09.04	Identify the risks involved in ownership of a business.
09.05	Identify the necessary personal characteristics of a successful entrepreneur.
09.06	Identify the business skills needed to operate a small business efficiently and effectively.
09.07	Create a business plan.

Course Number: GRA0039 Occupational Completion Point: D Web Designer – 300 Hours	
10.0	Demonstrate proficiency in website planning and the design process. The student will be able to:
10.01	Discuss the importance of information architecture to web design and development.
10.02	Conduct a client interview to determine the purpose and needs of the business.
10.03	Conduct a competitive analysis of similar industry sites.
10.04	Identify stages in the web design process and describe the activities comprising each stage.
10.05	Define the site structure by creating a content map, storyboard, and associated wireframes.
10.06	Discuss the legal and ethical issues related to web design and web content.
10.07	Describe accessibility and its implications on web design.
10.08	Create a website mock-up for client approval.
10.09	Continue developing a professional traditional and digital portfolio.
11.0	Develop markup language structures. The student will be able to:

11.01	Define common markup languages and understand the usage of these languages.
11.02	Identify common devices.
11.03	Determine device and browser support and the appropriate usage of markup languages (existing and emerging).
12.0	Create basic webpages. The student will be able to:
12.01	Create basic webpage structures using common markup elements and attributes.
12.02	Incorporate list structures in a webpage (ordered, unordered, definition, nested).
12.03	Incorporate link structures in a webpage (external, internal, email).
12.04	Research web color usage principles and incorporate in a webpage.
13.0	Incorporate images and graphical formatting on a webpage. The student will be able to:
13.01	Describe usage guidelines (e.g., format types, size, and relevance) for integrating images and graphics into a webpage.
13.02	Compare and contrast standard image formats used in webpage design.
13.03	Incorporate graphics into a webpage design.
13.04	Create and incorporate image maps in a webpage.
13.05	Optimize images and graphics for use in a webpage.
13.06	Incorporate bootstrap layout.
14.0	Incorporate form structures in a webpage. The student will be able to:
14.01	Create an accessible form using common elements; include form, field set, legend, text area, select, option, button, and input (radio, checkbox, submit, reset, image, password, and hidden).
14.02	Describe and diagram the relationship between XHTML forms and server-side technologies.
14.03	Compare and contrast the GET and POST methods for forms handling.
14.04	Define <i>form validation</i> and describe how it is accomplished.
14.05	List popular server-side technologies used to process content sent from XHTML forms.
14.06	Use labels with form elements.
14.07	Connect an XHTML form to a server-side script for processing.

15.0	Describe frame structures and the usage of these structures. The student will be able to:
15.01	Explore frame and iframe structures and support issues.
15.02	Describe appropriate uses of iframes.
15.03	Incorporate frame structure in a webpage.
16.0	Use Cascading Style Sheets (CSS). The student will be able to:
16.01	Define CSS and describe its importance in web design.
16.02	Compare and contrast existing and emerging CSS versions.
16.03	Determine browser support and the appropriate usage of CSS (existing and emerging versions).
16.04	Explain “document flow” and describe its implications on web design.
16.05	Recognize and use element selectors, ID selectors, class selectors, pseudo-class selectors, and descendant selectors.
16.06	Explain how inheritance and specificity affect CSS rule conflicts.
16.07	Use inline styles, embedded style sheets, and external style sheets.
16.08	Use the link and import methods to connect to an external style sheet.
16.09	Use CSS shorthand techniques to create efficient and concise style sheets.
16.10	Apply basic CSS properties (background, border, clear color, float, font, height, line-height, list-style, margin, overflow, padding position, text-align, text-indent, width, z-index, padding).
16.11	Use CSS to style tables (e.g., borders, width, spacing, alignment, background).
16.12	Use CSS to enhance the appearance and usability of an XHTML form.
17.0	Examine web design technologies and techniques. The student will be able to:
17.01	Compare and contrast common authoring tools.
17.02	Compare and contrast client-side and server-side technologies.
17.03	Define e-commerce types and usages.
17.04	Describe database connectivity relative to websites.
17.05	Identify technologies to enhance user experiences.

18.0	Describe the process for publishing a website. The student will be able to:
18.01	Explore domain name selection principles.
18.02	Identify the process for registering a domain name.
18.03	Compare and contrast hosting providers, features, and selection criteria.
18.04	Describe the various means for uploading website files (e.g., FTP, web-based tools).
19.0	Describe how website performance is monitored and analyzed. The student will be able to:
19.01	Identify issues related to website maintenance.
19.02	Use webpage validation tools.
19.03	Describe website performance metrics (e.g., visits, time-on-page, time-on-site) and discuss the implication of performance metrics on design.
19.04	Demonstrate knowledge of accessibility problems and solutions.
19.05	Examine indexing, page ranking, and basic Search Engine Optimization (SEO) techniques.
19.06	Explore common website analytic tools.
20.0	Create an informational website. The student will be able to:
20.01	Use Content Management System (CMS) web authoring software to create a multipage informational website.
20.02	Use image-editing software to enhance website designs with simple graphics.
20.03	Use animation software to enhance website designs.
20.04	Enhance the website using client-side technologies (e.g., rollovers, plug-ins, and pop-up windows).
20.05	Demonstrate efficient and consistent website development practices (e.g., the use of templates, snippets).

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Basic Skills

In Career Certificate Programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Computation (Mathematics) and Communications (Reading and Language Arts). These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02, Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01, F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College System Institution must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91, F.S.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: Postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Printing Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Career Certificate Program		
Program Number	I480205	
CIP Number	0610030501	
Grade Level	30, 31	
Program Length	990 hours	
Teacher Certification	Refer to the Program Structure section.	
CTSO	SkillsUSA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level	Computation (Mathematics): 9	Communications (Reading and Language Arts): 9

Purpose

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The purpose of this program is to prepare students for initial employment in the Printing and Graphic Communications industry.

The course content includes, but is not limited to, administrative support operations, pre-press/imaging operations, press operations and finishing operations. The course content should also include training in communication, leadership, human relations, employability skills, and safe, efficient work practices.

This program also prepares individuals to set up, operate and maintain preparation, printing, binding and finishing equipment used in the Printing and Graphic Communications industry. Graduates of this program will be prepared for further specialized training and education in Graphic Arts Technology and other related technologies.

This program focuses on broad, transferable skills and stresses understanding and demonstration of elements of the Printing and Graphic Communications Industry: planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues, and health, safety, and environmental issues.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of two occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	GRA0020	Digital Publishing Assistant 1	PRINTING @7 7G	247 hours
	GRA0021	Digital Publishing Assistant 2		248 hours
B	GRA0022	Desktop Publishing Specialist 1		247 hours
	GRA0023	Desktop Publishing Specialist 2		248 hours

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate an understanding of safety and first aid practices.
- 02.0 Demonstrate an understanding of graphic communications occupations and processes.
- 03.0 Demonstrate proficiency in art and copy preparation.
- 04.0 Demonstrate an understanding of the use of image manipulation programs.
- 05.0 Demonstrate proficiency in basic electronic imaging competencies.
- 06.0 Demonstrate an understanding of the uses of type and typography.
- 07.0 Demonstrate an understanding of the use of page layout operations.
- 08.0 Demonstrate an understanding of scanning (image capture) operations.
- 09.0 Demonstrate an understanding of a vector based graphics programs.
- 10.0 Demonstrate an understanding of electronic pre-press operations.
- 11.0 Demonstrate proficiency in using image manipulation programs.
- 12.0 Demonstrate proficiency in advanced operation of digital production printing systems.
- 13.0 Demonstrate proficiency in the use of type and typography.
- 14.0 Demonstrate proficiency in using page layout operations.
- 15.0 Demonstrate proficiency in scanning (image capture) operations.
- 16.0 Demonstrate proficiency in the use of vector based graphics programs.
- 17.0 Demonstrate proficiency in electronic pre-press operations.
- 18.0 Demonstrate proficiency in making and using files in the Portable Document Format (PDF).
- 19.0 Demonstrate proficiency in performing basic finishing and distribution competencies.
- 20.0 Demonstrate understanding of color principles as applied to the preparation, production, evaluation, and correction of color printing.
- 21.0 Demonstrate the ability to maintain and troubleshoot normal operating problems on a digital printing system.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Printing Technology
Career Certificate Program Number: I480205

Course Number: GRA0020
Occupational Completion Point: A
Digital Publishing Assistant 1 – 247 Hours

01.0 Demonstrate an understanding of safety and first aid practices. The student will be able to:

01.01 Discuss the importance of Material Safety Data Sheets (MSDS).

01.02 Practice proper safety procedures when operating equipment.

01.03 Pass a general lab safety test.

01.04 Demonstrate acceptable employee health habits.

01.05 Demonstrate knowledge of the Federal Hazard Communication regulation 29 CFR 1910.1200.

01.06 Pass a safety test in an individual's specialty area(s).

01.07 Practice approved methods to dispose of waste materials.

01.08 Read, comprehend and follow instructions on warning labels.

01.09 Demonstrate industry standard behaviors when working with others.

01.10 Demonstrate a working knowledge of the safety color code.

02.0 Demonstrate an understanding of graphic communications occupations and processes. The student will be able to:

02.01 Define the global role of graphics.

02.02 Identify printing markets and types of printing businesses.

02.03 List printing's ranking among other industries.

02.04 Identify the major printing processes.

02.05 List the advantages of each major printing process.

02.06 List the disadvantages of each major printing process.

02.07	Identify the products produced by each major printing process.
02.08	List the flow of printing product from initial need to final product.
02.09	List the technical production flow from idea to a finished product.
02.10	Identify major occupations in the graphic arts.
02.11	List the major responsibilities for each occupation.
02.12	Identify basic salary/wage expectation ranges for the local area.
02.13	Explain the various processes used to produce digitally printed material.
02.14	Identify the various function screens on the user interface for a digital production printing system.
03.0	Demonstrate proficiency in art and copy preparation. The student will be able to:
03.01	Prepare comprehensive layouts, including finished working mock-ups.
03.02	Employ the use of printer's measurements to compute inches and fractions, points and picas, decimals, percentages, and proportions.
03.03	Use copy fitting and mark-up procedures to specify type sizes, styles, etc.
03.04	Follow a job ticket to program and run standard jobs using a digital production printing system.
03.05	Program and load stock needed for a standard job.
03.06	Demonstrate basic proficiency in the operation of the scanner component of a black and white digital production printing system.
03.07	Demonstrate basic proficiency in the operation of the printer component of a digital production printing system.
03.08	Demonstrate basic proficiency in the operation of the delivery and binding components of a digital production printing system.
04.0	Demonstrate an understanding of the use of image manipulation programs. The student will be able to:
04.01	Use a variety of paint/edit/selection tools and special effects filters to manipulate digital images.
04.02	Identify industry standards and practices for file image compression, storage, and retrieval.
04.03	Apply image correction and color correction procedures/tools to continuous tone files.
04.04	Control image editing software to incorporate tone reproduction characteristics into continuous tone files.
04.05	Use photo editing software to incorporate output requirements into continuous tone files.

Course Number: GRA0021
Occupational Completion Point: A
Digital Publishing Assistant 2 – 248 Hours

05.0 Demonstrate proficiency in basic electronic imaging competencies. The student will be able to:

05.01 Read and comprehend production information on a job jacket/ticket.

05.02 Identify the various kinds of items that can be designed and produced using desktop publishing and digital production printing systems.

05.03 Demonstrate understanding of software capabilities.

05.04 Select appropriate software for word processing, graphics, scanning and page layout.

05.05 Organize a file management system for opening, copying, saving and deleting files.

05.06 Demonstrate file management operations for opening, copying, saving and deleting files.

05.07 Prepare a dummy for a multi-page signature.

05.08 Demonstrate an understanding of data exchange.

06.0 Demonstrate an understanding of the uses of type and typography. The student will be able to:

06.01 Measure copy/text in points and picas using a line gauge.

06.02 Identify x-height, mean line, baseline, ascenders, descenders, and their roles in measuring and designing with type.

06.03 Identify caps, lowercase, uppercase, small caps and ligatures.

06.04 Define dingbats, bullets, rules, and symbols and their uses in publications.

06.05 Distinguish between display (headline) type and body (text) type by point sizes and styles.

06.06 Identify the basic type styles and their uses.

06.07 Define the "weight" and "posture" of type.

06.08 Distinguish between serif and sans-serif type styles.

06.09 Define letter spacing and kerning of type characters.

06.10 Define word spacing and the relationship of *em* and *en* in paragraph spacing.

06.11	Define line spacing and explain the measurement principles for the leading of text.
06.12	Define type arrangements (flush left, ragged right, flush right, ragged left, centered, justified, and forced justified).
06.13	Define and demonstrate copy fitting.
07.0	Demonstrate an understanding of the use of page layout operations. The student will be able to:
07.01	Demonstrate how to markup a copy for production of a printed piece.
07.02	Select appropriate page layout software for a given job.
07.03	Demonstrate functional knowledge of computer commands/codes/menus/palette for the software in use.
07.04	Demonstrate text alignment, element positioning and rules of page design for printed matter.
07.05	Demonstrate a proficiency in conducting basic search operations.
07.06	Place copy from a word processing program to a page layout program according to job specifications.
07.07	Proofread, edit and make corrections/adjustment to copy on screen.
07.08	Download fonts.
07.09	Place graphics, rules, and dingbats from an existing file into a publication.
07.10	Demonstrate the procedure for cropping graphics electronically.
07.11	Create a 2-sided, 3-panel brochure using graphics and text for publication.
07.12	Create a 4-page newsletter using windows, blocks, text, graphics, frames and headings.
07.13	Create a 2-page newsletter using drop caps for paragraph openings, wraparound (runaround) and graphics.
07.14	Create a printed piece using tints, reverses and manipulated type for effect.
07.15	Produce a multicolor flyer using electronic spot color separations.
07.16	Demonstrate knowledge of available page layout programs - capabilities, advantages, and disadvantages.
07.17	Use electronic dictionaries, spell checker, and automatic hyphenation.
08.0	Demonstrate an understanding of scanning (image capture) operations. The student will be able to:
08.01	Identify scanner hardware and its basic components and operations.

08.02	Identify basic scanner software, its uses and limitations.
08.03	Demonstrate appropriate scanner/program operations for continuous tone copy.
08.04	Place scanned graphics/photos into an existing page layout program.
08.05	Use a camera for capturing images intended for print reproduction.
08.06	Clean and prepare prints for final scans.
08.07	Properly handle customer's original art.
09.0	Demonstrate an understanding of a vector based graphics programs. The student will be able to:
09.01	Log-on/boot-up a vector-based graphics program and demonstrate a functional knowledge of commands/codes/menus/tools and procedures for their uses.
09.02	Draw a design appropriate for a given job using a graphics program.
09.03	Create a design using tints, fills and paint for a given job using a graphics program.
09.04	Create a design using manipulated type (rotated, circled, extended, etc.) for a publication.
09.05	Trace a drawing/photograph using a graphics program.
09.06	Create a design/publication using electronic clip art.
10.0	Demonstrate an understanding of electronic pre-press operations. The student will be able to:
10.01	Define the application of digital photography in electronic imaging.
10.02	Identify and compare digital proofs.
10.03	Demonstrate an understanding of the PostScript page description language.
10.04	Describe the strengths and weaknesses of TIFF, EPS, PICT, JPEG, PNG, GIF, and DCS image formats.
10.05	Use a file compression utility for file transfer or storage.
10.06	Create a single color layout using clip art.
10.07	Create a single color layout using work and turn.
10.08	Change contrast using tint screens and shading techniques.
10.09	Create a logo design and integrate it into a brochure design.

10.10	Produce special effects type using a graphics application.
10.11	Produce a multicolor job that includes scans, text and spot color artwork.
10.12	Prepare page layout files containing graphic images for remote output.
10.13	Follow instructions to produce, modify or output files according to a customer supplied criteria.
10.14	Produce a color scan.
10.15	Use a photo manipulation program to perform basic color correction and basic image cloning.
10.16	Describe the characteristics of output devices.
10.17	Configure software and hardware for output to devices.
10.18	Evaluate image (output) quality.
10.19	Submit files to and use network, non-network and remote output devices.
11.0	Demonstrate proficiency in using image manipulation programs. The student will be able to:
11.01	Use a variety of paint/edit/selection tools and special effects filters to manipulate digital images.
11.02	Identify and apply industry standards and practices in file image compression, storage, and retrieval.
11.03	Apply image correction and color correction procedures/tools to continuous tone files.
11.04	Control image editing software to incorporate tone reproduction characteristics into continuous tone files.
11.05	Use photo editing software to incorporate output requirements into continuous tone files.

Course Number: GRA0022
Occupational Completion Point: B
Desktop Publishing Specialist 1 – 247 Hours

12.0	Demonstrate proficiency in advanced operation of digital production printing systems. The student will be able to:
12.01	Use the system interface to adjust image tone reproduction quality.
12.02	Use the system interface to modify page images through the functions of copy, mask, duplicate, delete, move, add, replace, rotate, and overlay images.
12.03	Use the merge library function.

12.04	Program and run a job with tab stock.
12.05	Program and run a job with folded signatures.
12.06	Program and set-up the various in-line finishing and binding options.
12.07	Program and run productivity features including cover sheets, job separator sheets, and the use of saved job tickets.
12.08	Program and run jobs on a digital color printing system.
12.09	Evaluate and adjust color print quality.
12.10	Apply troubleshooting and problem solving strategies on digital printing systems.
13.0	Demonstrate proficiency in the use of type and typography. The student will be able to:
13.01	Identify strategies and software used for font management in desktop publishing.
13.02	Set-up and use font management software.
13.03	Use the type scaling, kerning, tracking, and baseline shift typographic functions.
13.04	Demonstrate the comparative typography weaknesses and strengths of word processing software and page layout software.
13.05	Identify the differences between formatted and unformatted text files.
13.06	Demonstrate the correct use of paragraph and character style definitions in page layout software applications.
14.0	Demonstrate proficiency in using page layout operations. The student will be able to:
14.01	Set up column grids for electronic page layout according to job specifications.
14.02	Set up/select appropriate pagination for a given job.
14.03	Demonstrate the uses of footers and headers.
14.04	Set text with appropriate margins, formatting, gutters, leading, headings, etc.
14.05	Define and apply multiple master pages to a long document.
14.06	Merge documents in part or in their entirety.
14.07	Use paths for type and for image clipping.
14.08	Modify and redefine page and document specifications.

14.09	Apply section numbering for long documents.
14.10	Prepare a document index page.
14.11	Save a document in various file formats.
14.12	Determine and set preferences for specific document production requirements.
15.0	Demonstrate proficiency in advanced scanning (image capture) operations. The student will be able to:
15.01	Clean and prepare prints and slides for final scans.
15.02	Calculate required scan resolution.
15.03	Demonstrate how to calculate required percentage of enlargement/reduction.
15.04	Properly handle customer's original art.
15.05	Scan reflection and transmission originals, to include following customer specifications for cropping, sizing, file formatting, and resolution.
15.06	Acquire files from disks.
15.07	Set-up and use Optical Character Recognition (OCR) software to capture text pages and prepare a document for editing in a word processing application.
15.08	Locate and download specified files from the WWW/Internet.

Course Number: GRA0023
Occupational Completion Point: B
Desktop Publishing Specialist 2 – 248 Hours

16.0	Demonstrate proficiency in the use of vector based graphics programs. The student will be able to:
16.01	Draw a design appropriate for a given job using a graphics program.
16.02	Create a design using tints, fills and paint for a given job using a graphics program.
16.03	Create a design using manipulated type (e.g., rotated, circled, extended) for a publication.
16.04	Trace a drawing/photograph using a graphics program.
16.05	Organize and use typography, photography and illustration elements to communicate information in print.
17.0	Demonstrate proficiency in electronic pre-press operations. The student will be able to:

17.01	Calibrate a scanner.
17.02	Calibrate a color monitor.
17.03	Follow instructions to produce, modify or output files according to specified production workflow standards.
17.04	Describe the characteristics of output devices.
17.05	Configure software and hardware for output to devices.
17.06	Define data fields and publish contents of a database.
17.07	Submit files to and use servers, spoolers; queues, and software and hardware RIPs.
18.0	Demonstrate proficiency in making and using files in the Portable Document Format (PDF). The student will be able to:
18.01	Define the relationship between PostScript and PDF files.
18.02	Identify and define the attributes and advantages of a PDF file.
18.03	Identify and define the uses of a PDF file in the digital printing workflow.
18.04	Identify and define ways to distribute PDF files.
18.05	Make a PDF file from a PostScript file to meet given production specifications.
18.06	Edit, modify, and annotate a PDF file using appropriate software.
18.07	Use the PDF file format to make a multi-purposed document for both digital printing and interactive media.
18.08	Make a searchable digital catalog of a collection of PDF files.
18.09	Define and apply security and job options to PDF files.
18.10	Organize and embed fonts in a PDF file.
19.0	Demonstrate proficiency in performing basic finishing and distribution competencies. The student will be able to:
19.01	Read and comprehend production information on a job jacket/ticket.
19.02	Apply basic math skills to binding and distribution operations.
19.03	Prepare a folding dummy from a press sheet in accordance with job ticket specifications and an approved proof.
19.04	Setup and operate a folder in accordance with job ticket specifications and the folding dummy.

19.05	Apply basic principles of finishing and distribution following folded bound signature impositions to allow for lips, trims and bleeds according to saddle-stitch and side-stitch binding methods.
19.06	Define how to setup and use cutters.
19.07	Prepare rule-out of press sheet for finishing operations according to job ticket specifications and the approved proof.
19.08	Setup and operate a cutter in accordance with rule-out.
19.09	Square substrate.
19.10	Define and identify problems with substrate.
19.11	Define the proper maintenance procedures for paper cutters.
19.12	Understand and define how to change the blade on a paper cutter.
19.13	Select and identify the most commonly used types of paper.
19.14	Demonstrate knowledge of paper types related to the printing, folding and binding characteristics of each type.
19.15	Hand-jog 8 1/2" x 11" substrate.
19.16	Machine-jog substrate.
19.17	Define and identify off-line finishing systems.
19.18	Define the fundamentals of saddle stitching and perfect binding.
19.19	Identify the components of case, spiral, and perfect bound books.
19.20	Estimate the cost of materials and production for performing bindery operations (cutting, scoring, folding, packaging and coating).
19.21	Setup and operate a stitcher (side and saddle).
19.22	List the techniques used to control waste production and disposal in a modern bindery.
19.23	Define and identify spiral, comb, and wire binding equipment and supplies.
19.24	Define tipping procedures.
19.25	Perform preventive maintenance on binding and finishing equipment.
19.26	Demonstrate methods of counting substrate (machine, measurement, weight and rapid multiple-sheet manual counting by fives).
19.27	Define collating flat sheets.

19.28	Setup and operate a paper drill for a standard loose-leaf binder.
19.29	Define and identify packaging and shrink-wrapping equipment.
19.30	Demonstrate how to package and identify a completed job according to job specifications.
20.0	Demonstrate understanding of color principles as applied to the preparation, production, evaluation, and correction of color printing. The student will be able to:
20.01	Describe the concepts of color theory and color temperature.
20.02	Describe factors affecting the perception and recognition of color.
20.03	Identify and apply industry standard criteria to the evaluation of color in imaging and publishing.
20.04	Describe and identify the components and processes of color publishing systems.
20.05	Evaluate and color correct the quality of color publishing images.
20.06	Identify and describe models used to specify color.
20.07	Describe and identify color output devices of digital imaging systems.
20.08	Evaluate the quality of digital imaging color output devices.
20.09	Identify and describe the purposes of a Color Management System.
21.0	Demonstrate the ability to maintain and troubleshoot normal operating problems on a digital printing system. The student will be able to:
21.01	Perform the preventive maintenance procedures for cleaning sensors, camming motor, and binder.
21.02	Adjust paper path to handle various papers.
21.03	Determine source of machine-based printing problems and how to apply correction strategies.
21.04	Determine when to appropriately contact vendor technical support.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

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Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Cinema Production
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Career Certificate Program

Program Number	K100100	
CIP Number	0650060211	
Grade Level	30, 31	
Program Length	1050 hours	
Teacher Certification	Refer to the Program Structure section.	
CTSO	SkillsUSA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level	Computation (Mathematics): 9	Communications (Reading and Language Arts): 9

Purpose

The purpose of this program is to prepare students for initial employment in the Digital Cinema Production field as production assistants, equipment operators, camera assistants, sound equipment operators, editing equipment operators, grips and lighting equipment operators and visual effect artists.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, the history of cinema, production writing and management, art direction, cinematography, lighting, audio production, the use of editing software and post-production.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of five occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	FIL0085	Video Production Manager	TEC ED 1 @ 2 ENG&TEC ED1@2 TV PRO TEC @7 7G	300 hours
B	FIL0086	Camera and Lighting Grip		150 hours
C	FIL0087	Advanced Production Crew		300 hours
D	FIL0088	Digital Video Editor		150 hours
E	FIL0089	Visual Effects Artist		150 hours

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

Video Production Manager

- 01.0 Understand the history of cinema.
- 02.0 Demonstrate knowledge of the entertainment industry.
- 03.0 Understand intellectual property rights, copyright laws and plagiarism as each applies to creative assets.
- 04.0 Demonstrate knowledge of production writing as it relates to narrative filmmaking.
- 05.0 Understand the production process.
- 06.0 Demonstrate knowledge of production management.
- 07.0 Demonstrate basic knowledge of cinematography.
- 08.0 Demonstrate knowledge of storyboarding.

Camera and Lighting Grip

- 09.0 Demonstrate understanding of production set protocol.
- 10.0 Demonstrate understanding of electricity.
- 11.0 Demonstrate understanding of lighting principles.
- 12.0 Demonstrate understanding of lighting fixtures.
- 13.0 Demonstrate understanding of special effects lighting techniques and equipment.
- 14.0 Demonstrate understanding of grip principles.
- 15.0 Demonstrate understanding of basic grip equipment.
- 16.0 Demonstrate understanding of camera movement.

Advanced Production Crew

- 17.0 Demonstrate knowledge of cameras.
- 18.0 Demonstrate knowledge of cinematography.
- 19.0 Demonstrate knowledge of directing.
- 20.0 Demonstrate knowledge of art direction.
- 21.0 Demonstrate basic audio production.

Digital Video Editor

- 22.0 Demonstrate proficiency in computer skills.
- 23.0 Demonstrate knowledge of the post-production process.
- 24.0 Demonstrate knowledge of audio editing software.
- 25.0 Demonstrate knowledge of post-production editing software.
- 26.0 Demonstrate knowledge of digital content distribution.

Visual Effects Artist and Digital

- 27.0 Demonstrate knowledge of photo editing software.

- 28.0 Demonstrate knowledge of color correction software.
- 29.0 Demonstrate knowledge of compositing software.
- 30.0 Demonstrate employability and networking skills for the entertainment industry.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Cinema Production
Career Certificate Program Number: K100100

Course Number: FIL0085
Occupational Completion Point: A
Video Production Manager – 300 Hours

01.0 Understand the history of cinema. The student will be able to:

01.01 Understand the history and innovations of the motion picture industry.

01.02 Identify the major technological changes that impacted the motion picture industry (silent, sound, color, widescreen, digital).

01.03 Identify the major films and filmmakers that contributed to the aesthetic development of motion pictures.

02.0 Demonstrate basic knowledge of the entertainment industry. The student will be able to:

02.01 Identify the potential markets, brand partners, and target audiences for a motion picture project.

02.02 Effectively communicate a message or pitch.

02.03 Identify professional websites used by the motion picture industry.

03.0 Understand intellectual property rights, copyright laws and plagiarism as each applies to creative assets. The student will be able to:

03.01 Describe the limits and expectations of copyright protection.

03.02 Understand the use of “fair use” and “fair dealing.”

03.03 Understand the transfer and licensing of creative works.

03.04 Understand the use of “exclusive rights” to intellectual creations.

03.05 Understand the importance of digital watermarks.

04.0 Demonstrate knowledge of production writing as it relates to narrative filmmaking. The student will be able to:

04.01 Understand the role of a scriptwriter in the preproduction process.

04.02 Understand the importance of target audiences, markets, and demographics when writing a script.

04.03 Identify the elements of a script.

04.04	Develop the intended message and/or theme of a script.
04.05	Understand how genre conventions affect a story.
04.06	Identify the major characters and setting of a story.
04.07	Understand the basic story structure of a feature film (3 Act structure, Hero's Journey).
04.08	Demonstrate an understanding of character profiles.
04.09	Create a character profile.
04.10	Demonstrate ability to write a treatment.
04.11	Demonstrate ability to write a professionally formatted short script.
05.0	Understand the production process. The student will be able to:
05.01	Identify the job titles associated with the filmmaking process.
05.02	Identify various tools and equipment used to produce narrative productions.
05.03	Understand the stages of production pipeline from acquisition to exhibition.
05.04	Identify the departments of a production studio.
05.05	Understand production and department hierarchy.
05.06	Demonstrate and understand proper set protocol.
05.07	Identify the stages of production.
05.08	Understand production terms.
05.09	Create and organize production paperwork for use in pitch and/or preproduction meetings.
05.10	Demonstrate the proper use of standard filmmaking forms.
05.11	Understand the network associated with product distribution.
05.12	Understand the role streaming services play in the film distribution process.
05.13	Identify the major players involved in the distribution and exhibition of motion pictures.
05.14	Understand the importance of film festivals in the exhibition/distribution process.

05.15	Understand the role movie theaters play in the motion picture business.
06.0	Demonstrate knowledge of production management. The student will be able to:
06.01	Understand the job of a production manager.
06.02	Demonstrate ability to breakdown a script into production elements (ex: cast, props).
06.03	Create a production schedule.
06.04	Create a sample budget for a production.
06.05	Understand the role trade unions play in the budgeting process.
06.06	Demonstrate ability to write a casting call.
06.07	Understand the casting process.
06.08	Scout a location and perform a site survey.
06.09	Understand the process of acquiring a permit for shooting on location.
07.0	Demonstrate basic knowledge of cinematography. The student will be able to:
07.01	Demonstrate knowledge of basic composition and framing techniques.
07.02	Demonstrate knowledge of basic camera movements (e.g., pan, tilt, dolly, etc.).
07.03	Identify and understand the different lens types used in production (e.g., wide, telephoto, prime, and variable focal length).
07.04	Demonstrate basic knowledge of depth of field.
08.0	Demonstrate knowledge of storyboarding. The student will be able to:
08.01	Understand the importance of a shot list.
08.02	Describe visual storytelling and how storyboards are used during production.
08.03	Identify common aspect ratios and understand how to calculate ratios.
08.04	Demonstrate ability to create a storyboard using industry techniques.
08.05	Apply camera framing and camera movement to a storyboard.

Course Number: FIL0086
Occupational Completion Point: B
Camera and Lighting Grip – 150 Hours

09.0 Demonstrate understanding of production set protocol. The student will be able to:

09.01 Select proper lighting gear for the needs of a production.

09.02 Demonstrate ability to set up lights.

09.03 Demonstrate ability to use common hand and radio signals.

09.04 Demonstrate proper use of cables (wrapping, layout, securing) and cable labeling methods.

09.05 Follow proper lighting safety protocols.

09.06 Supervise hanging, circuiting, and focusing lights for production.

10.0 Demonstrate understanding of electricity. The student will be able to:

10.01 Demonstrate understanding of electrical units of measure.

10.02 Calculate amperage of lights.

10.03 Demonstrate understanding of Ohm's Law.

10.04 Understand the differences between direct current and alternating current.

10.05 Demonstrate use of proper grounding techniques.

10.06 Understand the importance of safely using portable and full-size generators on a set.

11.0 Demonstrate understanding of lighting principles. The student will be able to:

11.01 Identify the job descriptions of the lighting crew.

11.02 Identify relevant lighting cues from scripts and/or storyboards.

11.03 Create a lighting plan.

11.04 Demonstrate an understanding of exposure through the manipulation of F-Stops, ISO, and shutter speed.

11.05 Demonstrate understanding of contrast ratio.

11.06	Demonstrate knowledge of color temperature.
11.07	Demonstrate use of a light meter.
11.08	Understand the Inverse Square Law.
11.09	Determine lighting equipment needs for a planned production.
11.10	Demonstrate the proper use of color charts/white balance cards during production.
12.0	Demonstrate understanding of lighting fixtures. The student will be able to:
12.01	Understand the difference between Fresnel and open-faced lights.
12.02	Demonstrate understanding of various lighting gear (e.g., LED, fluorescents, HMI and tungsten).
12.03	Demonstrate an understanding of ambient and practical lighting.
13.0	Demonstrate understanding of special effects lighting techniques and equipment. The student will be able to:
13.01	Demonstrate both high-key and low-key lighting techniques.
13.02	Demonstrate how to incorporate lighting into exterior day setups.
13.03	Demonstrate use of gels and diffusions.
13.04	Demonstrate the use of hard (direct) lighting and soft (indirect) lighting.
13.05	Demonstrate the ability to create lighting effects.
13.06	Understand the challenges of lighting a green/blue screen.
13.07	(Optional) Demonstrate the proper use of fog machines.
14.0	Demonstrate understanding of grip principles. The student will be able to:
14.01	Identify the descriptions of the grip crew.
14.02	Translate script needs into creative uses of dollies, cranes and other camera mounts as required for production.
14.03	Identify relevant grip cues from production notes.
14.04	Analyze production requirements to determine grip equipment needs.
14.05	Demonstrate proper and safe use of equipment.

14.06	Appraise maintenance needs for equipment.
15.0	Demonstrate understanding of basic grip equipment. The student will be able to:
15.01	Demonstrate proper use of stands and stand extensions.
15.02	Demonstrate use of small and large butterflies.
15.03	Demonstrate proper use of sandbags.
15.04	Demonstrate use of apple boxes and risers.
15.05	Demonstrate ability to identify and use clamps and clips.
15.06	Demonstrate ability to use specialty knots (bowline, clove hitch, square).
15.07	Demonstrate ability to identify and use flags, dots, and fingers.
15.08	Demonstrate ability to identify and use silks and nets.
15.09	Demonstrate ability to identify and use reflectors and bounce boards.
16.0	Demonstrate understanding of camera movement. The student will be able to:
16.01	Demonstrate proper handheld camera techniques.
16.02	Demonstrate proper follow focus technique.
16.03	Identify commonly used camera stabilizers and rigs.
16.04	Demonstrate proper safety using camera stabilizers and rigs.
16.05	Utilize various camera stabilizers and rigs to create moving shots (e.g., cranes, gimbals, jibs, dollies, sliders, arms, and etc.).
16.06	Understand the proper use of drones.

Course Number: FIL0087
Occupational Completion Point: C
Digital Cinematographer – 300 Hours

17.0	Demonstrate knowledge of cameras. The student will be able to:
17.01	Demonstrate knowledge of mechanics and parts of the camera (e.g., shutter, f/stops, lenses, etc.).

17.02	Control lens, focal length, aperture, depth of field and exposure to obtain required effects.
17.03	Understand the difference between zoom and prime lenses.
17.04	Demonstrate the proper use of filters and polarizers.
17.05	Control camera movement to obtain required effects.
17.06	Analyze production requirements to determine camera equipment needs.
17.07	Analyze the aesthetic needs of a shot and accomplish them by using standard industry equipment.
17.08	Understand the protocols of using equipment from rental houses.
17.09	Perform basic and routine maintenance on camera equipment.
17.10	Select appropriate acquisition formats (media, compression and frame rates) for a production.
18.0	Demonstrate knowledge of cinematography. The student will be able to:
18.01	Understand the difference between film and digital camera technology.
18.02	Demonstrate understanding of different responsibilities within the camera department.
18.03	Execute a lighting plan.
18.04	Compare the techniques used in studio and location shooting.
18.05	Manage resources and personnel in order to meet production deadlines.
19.0	Demonstrate knowledge of directing. The student will be able to:
19.01	Analyze a script and create a shot list.
19.02	Identify the psychological effects of different types of angles (composition).
19.03	Demonstrate knowledge of blocking, dynamic composition, and screen direction.
20.0	Demonstrate knowledge of art direction. The student will be able to:
20.01	Demonstrate the ability to create moods through lighting and art direction.
20.02	Understand how the geographic location, time period and the time of day affect art direction.
20.03	Understand the importance of art direction as it pertains to character development and theme.

20.04	Understand the use of color in art direction.
21.0	Demonstrate basic audio production. The student will be able to:
21.01	Understand the history of audio recording in motion pictures.
21.02	Understand basic audio terminology (frequency, pitch, amplitude, signal to noise ratio, sampling rate, reverberation).
21.03	Demonstrate basic knowledge of acoustics.
21.04	Demonstrate knowledge of audio codecs and media.
21.05	Demonstrate the use of microphones, recorders, speakers, mixers, boom poles, other recording and playback equipment.
21.06	Evaluate audio recording needs of a specific production and specific locations.
21.07	Demonstrate proper microphone placement for a specific scene.
21.08	Demonstrate how to set up a recording environment.
21.09	Demonstrate the ability to record location sounds.

Course Number: FIL0088
Occupational Completion Point: D
Digital Video Editor – 150 Hours

22.0	Demonstrate proficiency in computer skills. The student will be able to:
22.01	Identify and understand workstation hardware and peripherals.
22.02	Demonstrate understanding of computer performance specifications.
22.03	Compare and contrast differences between business and consumer workstations.
22.04	Demonstrate best practices of computer safety and ergonomics.
22.05	Demonstrate understanding of operating systems.
22.06	Understand how to upgrade a workstation.
22.07	Perform storage management operations (project/file).
22.08	Demonstrate knowledge of computer maintenance.

22.09	Demonstrate ability to troubleshoot computer hardware and software issues.
22.10	Perform proper file organization and file naming when uploading and downloading files.
23.0	Demonstrate knowledge of the post-production process. The student will be able to:
23.01	Identify the job titles and roles of the post-production department.
23.02	Identify the psychological effects of different types of edits.
23.03	Demonstrate understanding of picture editing techniques.
23.04	Demonstrate an understanding of transitions.
23.05	Demonstrate an understanding of sound editing techniques.
23.06	Understand the process of syncing sound elements to picture elements.
23.07	Record dialogue replacement lines.
23.08	Create sound effects using live Foley techniques.
23.09	Formulate sound design for required sound effects and dialogue replacement to complete a motion picture soundtrack.
24.0	Demonstrate knowledge of audio editing software. The student will be able to:
24.01	Identify file formats and storage options.
24.02	Identify parts of the software interface (menus, tools and palettes).
24.03	Use software features such as import, export and saving audio.
24.04	Understand non-destructive and destructive operations.
24.05	Operate software to edit, cut and delete audio.
24.06	Perform basic edits using filters, effects, plug-ins, file presets and rendering.
24.07	Utilize multiple audio tracks.
24.08	Synchronize sound effects and ADR to picture elements.
24.09	Create a mix down.
25.0	Demonstrate knowledge of post-production editing software. The student will be able to:

25.01	Demonstrate understanding of file formats and storage options.
25.02	Identify workflows for different types of media (online and offline).
25.03	Understand non-destructive and destructive operations.
25.04	Identify parts of the software interface (menus/palettes).
25.05	Demonstrate ability to use each of the basic tool sets.
25.06	Demonstrate ability to import, export, and save projects.
25.07	Demonstrate understanding of layers and basic compositing.
25.08	Edit a project using filters, effects and plug-ins.
25.09	Demonstrate ability to manipulate digital images (e.g., crop, scale, color, opacity, and keyframing).
25.10	Demonstrate understanding of the rendering process.
26.0	Demonstrate knowledge of digital content distribution. The student will be able to:
26.01	Demonstrate an understanding of the formats and codecs used for online streaming services.
26.02	Understand the purpose of specific project deliverables when delivering content to clients or distributors.
26.03	Upload content for a specific viewing audience.
26.04	Use metadata and watermarking strategies to protect and identify their work.
26.05	Understand the process of encoding and compression.

Course Number: FIL0089
Occupational Completion Point: E
Visual Effects Artist – 150 Hours

27.0	Demonstrate knowledge of photo editing software. The student will be able to:
27.01	Demonstrate understanding of file formats and storage options.
27.02	Identify parts of the software interface (menus/palettes).
27.03	Demonstrate ability to use each of the basic tool sets.

27.04	Demonstrate ability to import, export and save images.
27.05	Demonstrate understanding of layers and channels.
27.06	Demonstrate understanding of filters, effects and plug-ins.
27.07	Demonstrate understanding of file presets.
27.08	Demonstrate ability to select portions of an image for manipulation.
27.09	Demonstrate ability to transform selections and images (crop, scale).
27.10	Demonstrate ability to color correct images (brightness, hue, contrast).
27.11	Demonstrate ability to use brushes for image creation and correction.
27.12	Understand non-destructive and destructive operations.
27.13	Create a digital watermark.
28.0	Demonstrate knowledge of color correction software. The student will be able to:
28.01	Identify parts of the software interface (menus/palettes).
28.02	Describe and use basic tool sets.
28.03	Edit using software features such as import, export and file saving.
28.04	Explain color balance, color theory, and channels.
28.05	Create masks and mattes.
28.06	Understand the use and operation of scopes and waveforms.
28.07	Demonstrate the use of LUTs (look up tables) for color grading.
28.08	Demonstrate tracking as it relates to color correction.
28.09	Demonstrate ability to use color correction to match shots in a scene.
28.10	Understand how color correction can be used to enhance the mood of a scene or project.
29.0	Demonstrate knowledge of compositing software. The student will be able to:
29.01	Understand the history of compositing and special effects production (both photographic and digital).

29.02	Identify parts of the software interface (menus/palettes).
29.03	Describe and use basic tool sets.
29.04	Edit using software features such as import, export and file saving.
29.05	Understand basic animation using effects presets.
29.06	Perform edits to animate text and layers.
29.07	Utilize rotoscoping tools for advanced effects.
29.08	Demonstrate how to animate masks.
29.09	Demonstrate motion tracking.
29.10	Demonstrate the ability to composite using green screens.
29.11	Demonstrate the process to render and output content.
29.12	Demonstrate the compositing integration of rendered 3D animation with video.
30.0	Demonstrate employability and networking skills for the entertainment industry. The student will be able to:
30.01	Create a professional resume.
30.02	Create an online portfolio of their best work for potential clients and employers.
30.03	Create a professional online profile.
30.04	Understand the process of creating a business.
30.05	Understand the differences between freelance, contract and salaried positions.
30.06	Understand the process for submitting work for festivals and distribution.
30.07	Participate in mock interviews.

Additional Information

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**Florida Department of Education
Curriculum Framework**

Program Title: Digital Media/Multimedia Design
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Career Certificate Program		
Program Number	K100200	
CIP Number	0609070208	
Grade Level	30, 31	
Program Length	1050 hours	
Teacher Certification	Refer to the Program Structure section.	
CTSO	SkillsUSA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level	Computation (Mathematics): 10	Communications (Reading and Language Arts): 10

Purpose

The purpose of this program is to prepare students for careers as digital media/multimedia artists.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, practical experiences with specialized skills in multimedia presentations such as imagery, time-based media, internet communication, and audio used to produce a variety of interactive multimedia presentations.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of four occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	DIG0081	Theory and Foundations of Design	BUS ED 1 @2 COMM ART @7 7G COMPU SCI 6 DIGI MEDIA 7G PRINTING @7 7G SECRETAR 7 G TEC ED 1 @2 ENG&TEC ED1@2 TEC ELEC @7 TV PRO TEC @7 7G VOE @7	150 hours
B	DIG0082	Multimedia Digital Designer		300 hours
C	DIG0083	Multimedia Web Interactive Designer		300 hours
D	DIG0084	Multimedia Integrated Producer Designer		300 hours

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

Theory and Foundations of Design

- 01.0 Demonstrate knowledge of presentation production issues.
- 02.0 Demonstrate basic computer knowledge.
- 03.0 Demonstrate knowledge of still images and time-based media production.
- 04.0 Demonstrate knowledge of photo and time-based editing software.

Multimedia Digital Designer

- 05.0 Demonstrate proficiency in advanced design.
- 06.0 Demonstrate understanding of color modes.
- 07.0 Identify key animation principles (e.g., momentum, overshoot, bounce, etc.).
- 08.0 Demonstrate proficiency in using fonts for advanced design.
- 09.0 Demonstrate proficiency in using illustration software.
- 10.0 Demonstrate knowledge of design layout software.
- 11.0 Demonstrate proficiency in using presentation software and equipment to produce a complex presentation.
- 12.0 Develop proficiency in using authoring software.

Multimedia Web Interactive Designer

- 13.0 Demonstrate proficiency in preliminary webpage design.
- 14.0 Demonstrate understanding of HTML and CSS.
- 15.0 Demonstrate proficiency in authoring software for webpage design.
- 16.0 Demonstrate knowledge of social media.

Multimedia Integrated Producer Designer

- 17.0 Demonstrate proficiency using video editing software and equipment.
- 18.0 Identify broad range of roles for time-based media production.
- 19.0 Demonstrate proficiency using all media to create a promotional campaign.
- 20.0 Apply job readiness, career planning and job seeking skills to meet personal and professional goals.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Media/Multimedia Design
Career Certificate Program Number: K100200

Course Number: DIG0081
Occupational Completion Point: A
Theory and Foundations of Design – 150 Hours

01.0	Demonstrate knowledge of presentation production issues. The student will be able to:
01.01	Identify characteristics of design for digital media (e.g., web, animation, video, and audio).
01.02	Identify presentation materials (slides/handouts) and presentation marketing formats (e.g., social media, print media, newspaper, billboards, posters, magazines, television, movies, computer presentations, web banners, advertisements and webpages).
01.03	Identify design characteristics (e.g., fonts, size, color modes, backgrounds) that are suited for each type of design format and material.
01.04	Demonstrate knowledge of design theory such as hierarchy, design composition, color theory, typography, balance, repetition, etc.
01.05	Demonstrate knowledge of copyright laws (e.g., copyright statutes, disclaimers, and filing procedures).
01.06	Research and identify job titles and skills needed for career positions in multimedia design using information from the U.S. Bureau of Labor Statistics (www.bls.gov).
01.07	Demonstrate understanding of multimedia file formats (e.g., EPS, PDF, TIFF, JPEG, PNG, ASCII, MPEG, MIDI, AVI, WAV) and knowledge of image size when scanning and saving files for use in different design types (print, web, computer, television, mobile devices).
01.08	Demonstrate knowledge of presentation vocabulary and terms.
02.0	Demonstrate basic computer knowledge. The student will be able to:
02.01	Identify basic computer components (e.g., CPU, monitor, keyboard, and resolution).
02.02	Demonstrate understanding of computer specifications.
02.03	Demonstrate best practices of computer safety and ergonomics.
02.04	Demonstrate knowledge of computer operating systems and platforms.
02.05	Demonstrate use of internal and external drives/storage and data backup.
02.06	Identify possible software and hardware malfunctions and perform basic troubleshooting operations.

02.07	Identify characteristics of software for print, photography, web, animation, video and audio.
03.0	Demonstrate knowledge of still images and time-based media production. The student will be able to:
03.01	Demonstrate knowledge of digital camera types for capturing stills and video.
03.02	Demonstrate knowledge of digital photography composition and time-based media.
03.03	Demonstrate knowledge of digital camera supports (e.g., tripod, grips, and holds).
03.04	Identify parts of a digital camera (e.g., lens, sensor, and battery).
03.05	Understand digital camera menus and navigation.
03.06	Demonstrate knowledge of auto modes and settings (e.g., F-stops, speed, and ISO).
03.07	Demonstrate knowledge of manual modes and settings (e.g., F-stops, speed, and ISO).
03.08	Demonstrate understanding of white balance and lighting.
03.09	Demonstrate proper care, use, and storage of digital cameras.
03.10	Create both a digital and printed portfolio.
04.0	Demonstrate knowledge of photo and time-based editing software. The student will be able to:
04.01	Demonstrate understanding of file formats and storage options.
04.02	Identify the parts of the software interface.
04.03	Demonstrate the ability to use each of the basic tool sets.
04.04	Demonstrate the ability to import, export and save images.
04.05	Demonstrate understanding of layers and channels.
04.06	Demonstrate understanding of filters, effects and plug-ins.
04.07	Demonstrate understanding of file presets.
04.08	Demonstrate the ability to select portions of an image for manipulation.
04.09	Demonstrate the ability to transform selections and images (crop and scale).
04.10	Demonstrate the ability to color-correct images (brightness, hue, and contrast).

04.11	Demonstrate the ability to use tools for image creation and correction.
04.12	Understand non-destructive and destructive operations.
04.13	Develop an awareness to import, paint and export 3D objects and/or Virtual Reality Objects.
04.14	Demonstrate the basic uses of video in photo editing software.
04.15	Plan and develop raster graphic to meet project needs through a formal RFP (request for proposal).

Course Number: DIG0082
Occupational Completion Point: B
Multimedia Digital Designer – 300 Hours

05.0	Demonstrate proficiency in advanced design. The student will be able to:
05.01	Demonstrate knowledge of advanced design.
05.02	Identify design strategies to reach the intended audience.
05.03	Use storyboarding or sketches to plan a design.
05.04	Create formal or informal design layouts using guidelines, colors, fonts, graphics and logos.
05.05	Demonstrate use of authoring software integration.
05.06	Identify compatibility formats (extensions) for authoring software integration.
06.0	Demonstrate understanding of color modes. The student will be able to:
06.01	Demonstrate knowledge of the color process for printing purposes.
06.02	Demonstrate knowledge of color conversion from display to print.
06.03	Demonstrate knowledge of spot colors.
06.04	Demonstrate knowledge of web-safe colors.
06.05	Explain color mode differences (e.g., RGB, CMYK, and HSB).
06.06	Understand accessing color modes from authoring software.
07.0	Identify key animation principles (e.g., momentum, overshoot, bounce, etc.). The student will be able to:

07.01	Demonstrate knowledge of stop motion and roto-scoping.
07.02	Demonstrate knowledge of time remapping.
08.0	Demonstrate proficiency in using fonts for advanced design. The student will be able to:
08.01	Identify <i>serif</i> and <i>sans-serif</i> fonts.
08.02	Demonstrate knowledge of conversion of fonts to outlines.
08.03	Understand the proprietary copyrights of fonts.
08.04	Demonstrate knowledge of standard font formats (e.g., TrueType, PostScript, and OpenType).
08.05	Design and develop a print and/or digital portfolio (e.g., business cards, posters, billboards, magazines, and brochures).
09.0	Demonstrate proficiency in using illustration software. The student will be able to:
09.01	Evaluate industry standard illustration software packages.
09.02	Identify characteristics of vector and bitmap images.
09.03	Demonstrate understanding of the software workspace and navigation (e.g., views, tabs, and zoom).
09.04	Demonstrate use of drawing tools to create, combine and edit basic shapes.
09.05	Demonstrate the ability to transform content (e.g., scale, rotation, and position).
09.06	Demonstrate understanding of Bezier curve and the appropriate tools for manipulation (e.g., direct select, convert anchor point, pen tool, pencil tool, etc.).
09.07	Demonstrate use of color and painting tools (e.g., patterns, gradients, and color palettes).
09.08	Demonstrate the ability to work with type (e.g., formatting, font palette, character panels, and paths).
09.09	Demonstrate use of layers by creating, locking, viewing, pasting, and merging.
09.10	Demonstrate use of blending (gradients and objects).
09.11	Demonstrate use of brushes; download new brushes.
09.12	Explore file exporting options and round-trip workflows with page layout software.
09.13	Demonstrate knowledge of bleed for vector and bitmap design software.
09.14	Plan and develop vector graphic to meet project needs through a formal RFP (request for proposal).

10.0	Demonstrate knowledge of design layout software. The student will be able to:
10.01	Identify parts of the software interface.
10.02	Demonstrate the ability to customize and navigate the workspace.
10.03	Demonstrate understanding of pre-flighting.
10.04	Work with styles, graphics and objects in a design.
10.05	Set up a document and manage pages within document.
10.06	Demonstrate use of layers, text frames and graphic frames.
10.07	Determine the appropriate use of grids, columns, margins, and bleed.
10.08	Demonstrate the ability to align, transform and group objects.
10.09	Understand typography and text editing.
10.10	Demonstrate understanding of color (e.g., applying, gradients, tint, spot, and management).
10.11	Import and modify graphics (e.g., links, vector/bitmap images, quality, and alpha channels).
10.12	Understand output and exporting functions (e.g., proofs, separations, and prepress).
11.0	Demonstrate proficiency in using presentation software and equipment to produce a complex presentation. The student will be able to:
11.01	Using authoring/editing software, create a multimedia presentation that incorporates custom raster graphics, vector graphics, typography, color and shapes and good design principles.
11.02	Demonstrate knowledge of the roles and responsibilities of a multimedia production team (e.g., project manager, creative or design director, content experts, writers, graphic designers, animators, sound designers, videographers, and interface designers/programmers).
12.0	Develop proficiency in using authoring software. The student will be able to:
12.01	Plan and develop media to meet project needs through a formal RFP (request for proposal).
12.02	Present project for evaluation and make modifications to improve the project.

Course Number: DIG0083
Occupational Completion Point: C
Multimedia Web Interactive Designer – 300 Hours

13.0	Demonstrate proficiency in preliminary webpage design. The student will be able to:
13.01	Determine the objectives and the audience for webpages.
13.02	Identify design strategies to reach and keep an audience.
13.03	Use storyboarding to plan a website.
13.04	Identify styles and other design elements (e.g., backgrounds, colors, fonts, and buttons).
14.0	Demonstrate understanding of HTML and CSS. The student will be able to:
14.01	Interpret HTML coding to identify the structure of an existing webpage
14.02	Develop HTML coding to write a webpage.
14.03	Demonstrate understanding of Cascading Style Sheets (CSS) on an existing webpage.
14.04	Demonstrate compliance with ADA recommendations for all websites created.
14.05	Utilize markup validity to ensure compliance with the W3C for all websites created.
15.0	Demonstrate proficiency in authoring software for webpage design. The student will be able to:
15.01	Demonstrate understanding of photograph compression factors such as transmission speed, color reduction, and browser support.
15.02	Save and export a photograph to the web in the best format for image quality and file size.
15.03	Demonstrate knowledge of image formats related to photos and graphics on the Internet.
15.04	Demonstrate understanding of pixels for web design.
15.05	Create webpages for publication.
15.06	Apply style sheets for consistent website design.
15.07	Format text for webpages (e.g., font families and sizes).
15.08	Create and edit images and photographs for webpages using digital imaging software.
15.09	Create and insert buttons into a webpage and test for accuracy.

15.10	Create navigational links.
15.11	Insert audio files into a webpage.
15.12	Create, edit and integrate video files into a webpage.
15.13	Create, edit and integrate animation files into a webpage.
15.14	Create meta-commands and keywords for search engines.
15.15	Optimize page size for effective downloading to browsers.
15.16	Create and incorporate a form into a webpage.
15.17	Edit and test links for accuracy and validity.
15.18	Create several webpages for a portfolio.
16.0	Demonstrate knowledge of social media. Student will be able to:
16.01	Identify design strategies to reach and keep a target audience.
16.02	Demonstrate an understanding of various social media algorithms.
16.03	Design and publish images on various social media platforms.
16.04	Storyboard and publish animations on various social media platforms.
16.05	Storyboard and publish short video clips to reach a target audience.

Course Number: DIG0084
Occupational Completion Point: D
Multimedia Integrated Producer Designer – 300 Hours

17.0	Demonstrate proficiency using time-based media editing software and equipment. The student will be able to:
17.01	Demonstrate knowledge of non-linear editing software.
17.02	Identify components of non-linear video editing equipment.
17.03	Set up non-linear video editing equipment.

17.04	Use storyboarding to plan a short non-linear video project that includes existing video footage with a title, transitions, background sound, voice-over, animation, and rolling credits.
17.05	Use time-based media editing software to create and edit a movie that includes video footage with a title, transitions, Foley audio and rolling credits and output to video.
17.06	Collaborate with team members to plan, edit, and shoot video footage utilizing advanced video editing techniques and output to video.
17.07	Discuss the use of batch processing and project trimming.
17.08	Plan, create, edit and present a short non-linear movie with title, transitions, sub and virtual clips, sound, background music, voice-over, and credits.
18.0	Identify broad range of roles for time-based media production. The student will be able to:
18.01	Collaborate with team members to plan, edit, evaluate, and present a multimedia presentation or product.
19.0	Demonstrate proficiency using all media to create a promotional campaign. The student will be able to:
19.01	Use authoring software to plan and create a promotional campaign that includes collateral materials, digital photography, webpages, animation, video, and/or audio.
20.0	Apply job readiness, career planning and job seeking skills to meet personal and professional goals. The student will be able to:
20.01	Create a digital résumé and print it.
20.02	Create and publish a digital portfolio.
20.03	Market digital media/multimedia design skills for employment.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Basic Skills

In Career Certificate Programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Computation (Mathematics) and Communications (Reading and Language Arts). These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02, Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01, F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College System Institution must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91, F.S.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Photography Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Career Certificate Program		
Program Number	K100300	
CIP Number	0650060502	
Grade Level	30, 31	
Program Length	1050 hours	
Teacher Certification	Refer to the Program Structure section.	
CTSO	SkillsUSA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level	Computations (Mathematics): 9	Communications (Reading and Language Arts): 9

Purpose

The purpose of this program is to prepare students for careers in the photography industry.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, communication skills, leadership skills, human relations and employability skills, safe and efficient work practices, and the use of digital cameras techniques, commercial and industrial applications with emphasis on composition and color dynamics, printing, workflow, software and use, care, and maintenance of photographic equipment.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of four occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	PGY0190	Photographic Specialist	PHOTOG @7 G	150 hours
B	PGY0191	Photography Technician		300 hours
C	PGY0192	Studio Photographer		300 hours
D	PGY0193	Digital Photographer		300 hours

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

Photographic Specialist

- 01.0 Discuss the history of photography.
- 02.0 Evaluate the production process.
- 03.0 Understand intellectual property rights, copyright laws and plagiarism as each applies to creative assets.
- 04.0 Operate parts of a camera system.
- 05.0 Demonstrate proper use of camera and support equipment.
- 06.0 Take basic photographs.
- 07.0 Use photographic workflow applications.

Photography Technician

- 08.0 Develop a production plan.
- 09.0 Demonstrate knowledge of art/creative direction.
- 10.0 Demonstrate proficiency in computer skills.
- 11.0 Use photo editing software.
- 12.0 Use photographic lights.
- 13.0 Use photography sets, backgrounds and stages.
- 14.0 Process and print photographs.

Studio Photographer

- 15.0 Demonstrate knowledge of photo/video journalism.
- 16.0 Demonstrate knowledge of video production with Interchangeable Lens Cameras (ILC).
- 17.0 Demonstrate knowledge of video software.
- 18.0 Practice the business of commercial digital photography.

Digital Photographer

- 19.0 Operate various format cameras.
- 20.0 Demonstrate knowledge of advanced software retouching.
- 21.0 Develop a professional portfolio of work.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Photography Technology
Career Certificate Program Number: K100300

Course Number: PGY0190 Occupational Completion Point: A Photographic Specialist – 150 Hours	
01.0	Discuss the history of photography. The student will be able to:
01.01	Discuss photography as an invention.
01.02	Describe early uses of photography.
01.03	Describe the mechanics of early photographic systems.
01.04	Discuss the concept of photography as art.
01.05	Show the concept of the “decisive moment.”
01.06	Identify aesthetic differences between genres of photography (e.g., pictorial, straight, and photojournalism).
01.07	Demonstrate knowledge of the use and role of Digital Photography in the present.
02.0	Evaluate the production process. The student will be able to:
02.01	Identify the job titles associated with digital photography.
02.02	Identify various tools and equipment used in digital photography.
02.03	Use speed and efficiency concepts (workflow).
02.04	Identify the different types of photographic media and the relation to occupations in the field of Photography (e.g., photojournalism, fine art, event, headshots, family portrait, fashion, sports, magazine, publications, and product).
02.05	Identify the need for industry networking and forming relationships with professionals in the field.
02.06	Use basic communication concepts (e.g., verbal, memos, and paperwork and purchase orders).
02.07	Identify the stages of production.
02.08	Analyze photographic terms and jargon.

	02.09 Prepare, organize, and create presentations for clients (e.g., contact sheets and design layouts).
03.0	Understand intellectual property rights, copyright laws and plagiarism as each applies to creative assets. The student will be able to:
	03.01 Examine the limits and expectations of copyright protection.
	03.02 Analyze the various types of shared work in dealing with all forms of intellectual property, online as well as physical.
	03.03 Describe the transfer and licensing of creative work.
	03.04 Articulate the use of “exclusive rights” to intellectual creations.
	03.05 Demonstrate the use of metadata for embedding authorship within a photo.
04.0	Operate parts of a camera system. The student will be able to:
	04.01 Identify basic camera parts (e.g., lens, battery, flash, shutter and display).
	04.02 Remove and attach standard lenses.
	04.03 Charge and connect batteries.
	04.04 Identify, insert and format recording media.
	04.05 Use basic camera functions (e.g., menu settings and application of settings).
	04.06 Set image format and size.
	04.07 Use camera auto, program, scene and manual modes.
	04.08 Use camera viewfinder and LCD displays for image review.
	04.09 Use basic lens controls (auto, manual focus and zoom).
	04.10 Use image International Standards Organization (ISO) and metering functions.
	04.11 Set proper white balance.
	04.12 Use shutter and aperture priority modes.
	04.13 Set proper f-stop and shutter speeds.
	04.14 Use camera drive modes such as delayed, multiple and remote.
	04.15 Operate a camera mounted flash and use fill and red-eye reduction.

05.0	Demonstrate proper use of camera and support equipment. The student will be able to:
05.01	Perform basic handholds of camera in portrait and landscape.
05.02	Identify basic components of a tripod (head, sticks and spreader) and set up a tripod with a camera attached.
05.03	Setup and level tripod for use in portrait and landscape.
05.04	Attach camera to support equipment.
05.05	Identify auxiliary support devices.
06.0	Take basic photographs. The student will be able to:
06.01	Apply camera care and maintenance principles.
06.02	Define the subject of a photograph.
06.03	Identify available light sources.
06.04	Demonstrate understanding of photo composition (e.g., rule of thirds, leading lines).
06.05	Select an appropriate lens for subject (wide, tight, macro).
06.06	Use available light to take still life, portrait, and action photographs.
06.07	Create a series (picture study) of photographs around a defined subject.
07.0	Use photographic workflow applications. The student will be able to:
07.01	Establish system requirements for workflow application software.
07.02	Install and configure workflow application software.
07.03	Identify parts of the software interface (menus and palettes).
07.04	Import photographs from various media sources.
07.05	Define and create keyword tags for imported images.
07.06	Organize, rate, label and rename image collections.
07.07	Create and modify image metadata.
07.08	Perform image post-processing various editing software (e.g., crop, image selection, and image adjustments).

07.09	Export final images for clients.
07.10	Create and upload photos to online portfolio, online art sharing sites, and social media.
07.11	Utilize both menus and tools within the software interface.

Course Number: PGY0191
Occupational Completion Point: B
Photographic Technician – 300 Hours

08.0	Develop a production plan. The student will be able to:
08.01	Identify contract scope and work requirements when working with a client.
08.02	Identify client needs.
08.03	Determine distribution requirements and client deliverables.
08.04	Identify the stages of production.
08.05	Create basic communication concepts verbally and online.
08.06	Develop a production schedule.
08.07	Define roles and coordinate needed production crew.
08.08	Evaluate the scope and use of model releases.
08.09	Evaluate the scope and use of property releases.
08.10	Evaluate the scope and use of liability releases.
08.11	Identify need and use for production insurance.
08.12	Determine and secure equipment as required per project.
09.0	Demonstrate knowledge of art/creative direction. The student will be able to:
09.01	Develop overall aesthetic of a photograph based on client's needs, art direction, or brand purpose.
09.02	Demonstrate the ability to create moods with design elements for the images.
09.03	Describe the importance of art direction as it pertains to the message to be conveyed for the images (e.g., composite images and photography).

09.04	Identify the use of color in art direction.
09.05	Understand the various roles in a large production.
09.06	Use industry standards to execute assigned tasks in a professional manner.
10.0	Demonstrate proficiency in computer skills. The student will be able to:
10.01	Understand how computers function as it pertains to necessary components and software for photography.
10.02	Understand computer performance requirements for image making software.
10.03	Perform computer and software upgrades.
10.04	Understand the importance of storing and backing up data and photos.
10.05	Identify basic troubleshooting and software issues that can occur on jobs/sites.
11.0	Use photo editing software. The student will be able to:
11.01	Demonstrate understanding of file formats and storage options.
11.02	Compare and contrast available photographic editing software.
11.03	Identify parts of the software interface (menus and palettes).
11.04	Use each of the basic tool sets.
11.05	Import, open files, and save, and export images.
11.06	Develop a file backup plan.
11.07	Demonstrate understanding of layers and channels.
11.08	Demonstrate understanding of filters, effects and plug-ins.
11.09	Demonstrate understanding of value and efficiency of file presets.
11.10	Select portions of an image for manipulation using selection tools.
11.11	Edit image size using edit/transform tools and cropping tools.
11.12	Modify and color-correct images using a combination of the following: hue/saturation, vibrance, levels, curves, and brightness/contrast.

11.13	Use and append brushes for image creation and adjustments.
11.14	Identify non-destructive and destructive operations.
11.15	Import edit and export raw files.
11.16	Demonstrate the basic uses of video.
11.17	Demonstrate knowledge of use for the undo / redo, history, and cache system.
11.18	Use keyboard shortcuts to improve efficiency.
11.19	Locate and effectively use the help menu system.
11.20	Use editing software for image altering and designing basic typography and/or text-specific art/images.
12.0	Use photographic lights. The student will be able to:
12.01	Demonstrate understanding of light (direction, intensity, color, contrast, hardness).
12.02	Demonstrate understanding of natural, artificial, available and ambient light sources.
12.03	Demonstrate understanding and use of sunlight (time of day, color temperature, color correcting, blocking and shade).
12.04	Use continuous lighting setups and equipment.
12.05	Use flash and strobe light setups and systems.
12.06	Use on camera and integrated camera flash systems.
12.07	Demonstrate understanding of three-point lighting.
12.08	Use a light meter.
12.09	Use light modifiers such as scrim, reflectors and flags.
12.10	Use lights on location.
13.0	Use photography sets, backgrounds and stages. The student will be able to:
13.01	Set up backgrounds, sets, or set plans under direction or independently after dialogue with the set/creative director.
13.02	Define the intended look and materials to be used.
13.03	Erect background stands and hang background material.

13.04	Adjust available seating for studio portraits.
13.05	Safely secure all grip equipment including reflector stands, c-stand, light stands and sandbags.
14.0	Process and print photographs. The student will be able to:
14.01	Prepare photos, both color and black and white images, for printing using photo editing software.
14.02	Adjust the crop, bleed, and trim of a photograph.
14.03	Adjust the color mode and resolution of a photograph.
14.04	Calibrate computer monitor and software for printing system.
14.05	Compare and contrast available papers, printers and inks.
14.06	Compare and contrast available printing services based on quality, speed, price, reliability, location.
14.07	Describe International Color Consortium (ICC) profiles purpose and use.
14.08	Describe the value of archival inks and papers.
14.09	Analyze color prints for color correction and tonality.
14.10	Describe methods of mounting, matting and framing photographs.

Course Number: PGY0192
Occupational Completion Point: C
Studio Photographer – 300 Hours

15.0	Demonstrate knowledge of photo/video journalism. The student will be able to:
15.01	Describe the history of photo/video journalism.
15.02	Identify the jobs and roles related to photo/video journalism.
15.03	Analyze the legal and ethical issues related to photo/video journalism.
15.04	Describe the elements that make up a photo story.
15.05	Create a story board sequence of a photo story and write captions.
15.06	Imbed metadata as needed.

15.07	Shoot correct length of video to tell story and provide coverage.
15.08	Prepare media for and identify distribution sources.
16.0	Demonstrate knowledge of video production with Interchangeable Lens Cameras (ILC). The student will be able to:
16.01	Compare still and video modes on camera.
16.02	Compose video shots to demonstrate movement.
16.03	Choose the appropriate video format (standard/codec and frame rate).
16.04	Compare and contrast ILC video with traditional video cameras
16.05	Choose appropriate recording media based on card speed and size.
16.06	Select appropriate focusing aids and methods.
16.07	Analyze production requirements to determine lighting equipment needs.
16.08	Set appropriate exposure, white balance and shutter speed.
16.09	Use external audio capture device.
16.10	Identify video compression picture quality loss.
16.11	Demonstrate the use of full and cropped sensors (e.g., rolling shutter).
16.12	Establish the use of action-safe and title-safe areas.
16.13	Set appropriate focus.
16.14	Analyze differences with various microphones (e.g., condenser, lavalier, dynamic) to capture audio for video.
16.15	Understand the use of matte boxes.
16.16	Demonstrate use of stabilization rigs.
16.17	Transfer footage to content management software.
17.0	Demonstrate knowledge of video software. The student will be able to:
17.01	Demonstrate the aspects of video editing used in production of video and audio clips, movies, etc.
17.02	Identify panel layout and aspects of each in video editing software.

17.03	Use tools, effects, and filter features in video editing software.
17.04	Understand the importance of asset management when importing and organizing.
17.05	Sync external audio with corresponding video clip.
17.06	Use motion paths, rendering functions, and lighting effects in video editing software for specific/separate functionality within a work of art.
17.07	Apply layer mask to video.
17.08	Color-correct video using brightness, hue and contrast adjustments.
17.09	Use vector, text, and color keying tools.
17.10	Export and render video to appropriate format.
18.0	Practice the business of commercial digital photography. The student will be able to:
18.01	Identify business aspects of commercial digital photography.
18.02	Apply appropriate communication and human relations skills.
18.03	Analyze the photography industry's various market sectors (events, family portrait, public relations, product/studio, fashion, catalog, magazine and food).
18.04	Develop a business plan for a commercial photography business.
18.05	Identify and understand the importance of industry associations related to commercial photography.
18.06	Research market rates for photographic work.
18.07	Compare and contrast available stock photography sites.
18.08	Research online portfolio sites.
18.09	Develop effective advertising.

Course Number: PGY0193
Occupational Completion Point: D
Digital Photographer – 300 Hours

19.0 Operate various format cameras. The student will be able to:

19.01	Use various format cameras (e.g., DSLR, mirrorless, hybrid, and medium format).
19.02	Understand the unique attributes of mobile phone cameras.
19.03	Understand processing images with tether capture within software.
20.0	Demonstrate knowledge of advanced software retouching. The student will be able to:
20.01	Process and create HDR images in camera and with photo editing software.
20.02	Demonstrate alternate software workflows.
20.03	Process and create panoramic images in camera and with photo editing software.
20.04	Create software presets.
20.05	Process and create black and white images in camera and with photo editing software.
20.06	Utilize digital stitching and composite images into single frame images.
20.07	Restore damaged photos.
20.08	Reduce ghosting effect using photo editing software.
20.09	Reduce noise and correct chromatic aberrations.
20.10	Export finished image as flat image or HDR format image.
21.0	Develop a professional portfolio of work. The student will be able to:
21.01	Identify elements of a professional portfolio and résumé.
21.02	Examine and select student work to include in a portfolio and résumé.
21.03	Select cohesive photographs and information to include in a portfolio and résumé.
21.04	Explore and/or utilize websites and digital portfolio creation, distribution and viewing.
21.05	Determine the format for portfolio and résumé.
21.06	Research local galleries for portfolio exhibition.
21.07	Produce résumé for final review.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Basic Skills

In Career Certificate Programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Computation (Mathematics) and Communications (Reading and Language Arts). These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02, Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01, F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College System Institution must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91, F.S.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Program Title: Digital Video Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Career Certificate Program		
Program Number	K100400	
CIP Number	0610010524	
Grade Level	30, 31	
Program Length	900 hours	
Teacher Certification	Refer to the Program Structure section.	
CTSO	SkillsUSA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level	Computation (Mathematics): 9	Communications (Reading and Language Arts): 9

Purpose

The purpose of this program is to prepare students for initial employment as production assistants, audio/video equipment technicians, video/TV camera operators, video editors, multimedia artists/animators and broadcast technicians.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes but is not be limited to communication skills, leadership skills, human relations and employability skills, safe and efficient work practices, and preparation to assume responsibility for the overall production of digital video activities (e.g., scripts, lighting, camera operation, electronic news gathering, field/studio production, video editing).

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of three occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	RTV0015	Digital Videography	TEC ED 1 @ 2 ENG&TEC ED1@2 TV PRO TEC @7 7G	450 hours
B	RTV0016	Digital Audio-Video Technology		300 hours
C	RTV0017	Digital Video Direction and Production		150 hours

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

Digital Videography

- 01.0 Apply knowledge of the digital video technology program procedures.
- 02.0 Demonstrate an understanding of basic industry terminology and acronyms.
- 03.0 Collaborate with others as an effective member of a digital video team.
- 04.0 Demonstrate professionalism and personal responsibility.
- 05.0 Use basic digital video technology equipment.
- 06.0 Identify lighting needs for a planned production.
- 07.0 Interpret scripts for digital video technology.
- 08.0 Operate an editing system.
- 09.0 Understand and demonstrate the steps in the digital video pre-production process.
- 10.0 Understand and demonstrate the digital video production process.
- 11.0 Understand basic audio operations.
- 12.0 Demonstrate understanding of the digital video post-production process.
- 13.0 Understand the value of graphics in a production.
- 14.0 Demonstrate the ability to perform on camera.
- 15.0 Develop interviewing skills.
- 16.0 Demonstrate awareness of industry-related ethics and laws.
- 17.0 Use television production equipment for a digital video production.
- 18.0 Perform lighting activities for a digital video production.
- 19.0 Demonstrate the ability to complete the pre-production process for a video production project.
- 20.0 Demonstrate the ability to complete the production process for a video production project.
- 21.0 Demonstrate the ability to complete the post-production process for a video production project.
- 22.0 Demonstrate industry accepted skills for remote productions.
- 23.0 Demonstrate the ability to complete the pre-production process for an advanced video production project.
- 24.0 Demonstrate the ability to complete the production process for an advanced video production project.
- 25.0 Demonstrate the ability to complete the post-production process for an advanced video production project.

Digital Audio-Video Technology

- 26.0 Plan, coordinate, and manage a video or webcast production.
- 27.0 Demonstrate an understanding of employability in the digital video production industry.
- 28.0 Create and produce a digital video production.
- 29.0 Demonstrate an independent level of proficiency in a selected area of specialization.

Digital Video Direction and Production

- 30.0 Demonstrate advanced script writing techniques.
- 31.0 Apply skills by producing a program.
- 32.0 Perform advanced digital audio and video recording and editing operations.

**Florida Department of Education
Student Performance Standards**

Program Title: Digital Video Production
Career Certificate Program Number: I100240

Course Number: RTV0015
Occupational Completion Point: A
Digital Videography – 450 Hours

01.0 Apply knowledge of the digital video technology program procedures. The student will be able to:

01.01 Follow classroom procedures.

01.02 Follow industry safety rules, regulations and policies.

01.03 Demonstrate proper use and care of equipment.

02.0 Demonstrate an understanding of basic industry terminology and acronyms. The student will be able to:

02.01 Define trade terminology, including the four steps of the production process.

02.02 Define trade abbreviations and acronyms when appropriate.

03.0 Collaborate with others as an effective member of a digital video team. The student will be able to:

03.01 Understand the job functions of a digital video team.

03.02 Give and follow directions.

03.03 Function as a member of a team.

03.04 Set and adhere to production deadlines established by others.

03.05 Critique and analyze a production.

04.0 Demonstrate professionalism and personal responsibility. The student will be able to:

04.01 Discuss how to legally obtain and use source materials.

04.02 Explain basic copyright laws and issues related to digital video production.

04.03 Discuss appropriate responses to feedback.

05.0 Use basic digital video technology equipment. The student will be able to:

05.01	Set up, turn on, and operate a video camera.
05.02	Identify and demonstrate basic video composition principles (e.g., rule of thirds, leading lines, and rule of 180).
05.03	Identify the qualities of good videography.
05.04	Identify, select, and demonstrate the use of appropriate microphones for a production (pick-up pattern, directionality, etc.).
05.05	Identify the qualities of a good audio track.
05.06	Identify and select appropriate equipment for a specific production.
05.07	Record, transfer, store, and play assets from various media.
06.0	Identify lighting needs for a planned production. The student will be able to:
06.01	Explain the use of basic lighting equipment.
06.02	Define light quality in terms of intensity, color, direction, and characteristics.
06.03	Analyze lighting needs for a production.
06.04	Set up appropriate lighting for a production (one-, two-, three- point lighting, etc.).
07.0	Interpret scripts for digital video technology. The student will be able to:
07.01	Define the terminology used in script writing.
07.02	Identify a script by format, function, and utilization.
07.03	Specify the steps that lead to a complete script.
07.04	Write a script in an appropriate format.
08.0	Operate an editing system. The student will be able to:
08.01	Select the best source material such as voiceover (VO), sound on tape (SOT) and b-roll to achieve program goals.
08.02	Combine elements into a program.
08.03	Control video clips and effects.
08.04	Control audio mix and effects.
08.05	Prepare basic graphics for a production.

09.0	Understand and demonstrate the steps in the digital video pre-production process. The student will be able to:
09.01	Identify and perform the components of the pre-production phase (e.g., purpose, script writing, target audience, schedule, and distribution method).
09.02	Identify the format/segment type, audience, and genre.
09.03	Explain the components of a pitch, storyboard, and script.
09.04	Select the appropriate location(s) for the specified program type.
09.05	Establish feasible production deadlines.
10.0	Understand and demonstrate the digital video production process. The student will be able to:
10.01	Identify and perform the components of the production phase (e.g., selecting equipment, operating equipment, interviewing, directing, lighting, and audio).
10.02	Summarize the roles of the various personnel for video production projects (e.g., producer, director, editor, camera operator).
10.03	Identify and perform commonly used camera shots, angles, and movements.
10.04	Understand how the lens, focal length, aperture, and exposure work to create desired effects.
10.05	Plan and execute shot to obtain the required action/footage in studio and/or field production environments.
10.06	Perform basic field production tasks that include camera, lighting, and sound responsibilities.
11.0	Understand basic audio operations. The student will be able to:
11.01	Compare and contrast various microphone types.
11.02	Identify and select microphones for production needs.
11.03	Determine optimal microphone placement.
11.04	Establish appropriate recording conditions.
11.05	Set up audio recording equipment.
11.06	Perform pre-production sound checks.
11.07	Record production sound.
12.0	Demonstrate understanding of the digital video post-production process. The student will be able to:

12.01	List the components of the post-production phase (e.g., video and audio editing, graphics, and distribution method).
12.02	Understand production values (e.g., continuity).
12.03	Define appropriate audio and video digital compression and signal types.
12.04	Explain the need for data management.
12.05	Organize and evaluate materials for editing.
12.06	Perform basic editing functions (cuts, transitions, etc.).
12.07	Mix audio and video resources in appropriate sequence for the final cut.
13.0	Understand the value of graphics in a production. The student will be able to:
13.01	Demonstrate an understanding of graphic image types, file formats, and technical requirements for a production.
13.02	Understand text, font, colors, title safe area, lower thirds, and placement.
13.03	Determine the graphic requirements for a production.
13.04	Edit basic graphics into a program or segment using editing software.
13.05	Demonstrate the ability to use type, color, composition, and graphic elements.
14.0	Demonstrate the ability to perform on camera. The student will be able to:
14.01	Practice appropriate on-camera performance skills (e.g., appearance, gestures, and posture).
14.02	Demonstrate appropriate speaking skills for an on-camera performance (e.g., pitch, tone, emphasis, inflection, enunciation, and timing).
14.03	Perform as talent in a production.
15.0	Develop interviewing skills. The student will be able to:
15.01	Develop open-ended questions to elicit detailed responses.
15.02	Select appropriate subjects to interview based on a specific topic.
15.03	Select an effective location that complements the interview.
15.04	Contact potential subjects and schedule an interview.
15.05	Conduct an interview using coherent and concise language and correct grammar.

15.06	Demonstrate effective listening skills.
16.0	Demonstrate awareness of industry-related ethics and laws. The student will be able to:
16.01	Define terminology related to ethics and laws (e.g., plagiarism, copyright law, libel, slander, right to privacy).
16.02	Summarize and explain the legal and ethical acquisition and use of digital materials; appropriately cite sources.
16.03	Research and understand the Fair Use Act of 2007.
17.0	Use television production equipment for a digital video production. The student will be able to:
17.01	Execute good videography principles while filming for a production.
17.02	Use appropriate equipment for a production.
17.03	Perform basic maintenance and troubleshooting on equipment.
18.0	Perform lighting activities for a digital video production. The student will be able to:
18.01	Create and label a diagram for a lighting plan.
18.02	Assemble appropriate lighting using lighting modifiers (e.g., reflectors, flags, artificial lighting, and diffusers).
18.03	Create depth and dimension using appropriate light modifiers.
19.0	Demonstrate the ability to complete the pre-production process for a video production project. The student will be able to:
19.01	Define the objective and intended audience for a video production project (e.g., public service announcement).
19.02	Prepare a detailed pitch, storyboard, and script for a video production project (e.g., public service announcement).
19.03	Create a schedule for the production project.
20.0	Demonstrate the ability to complete the pre-production process for a video production project. The student will be able to:
20.01	Demonstrate knowledge of camera equipment and functions.
20.02	Plan, execute, and record a video shoot to obtain the required action/footage and effects.
20.03	Perform production tasks that include intermediate camera, lighting, and sound techniques.
21.0	Demonstrate the ability to complete the post-production process for a video production project. The student will be able to:
21.01	Demonstrate the ability to edit video and audio sources.

21.02	Demonstrate appropriate use of graphics in a production (e.g., lower thirds and full screen graphics).
21.03	Identify and export video for an appropriate distribution method for a project.
22.0	Demonstrate industry accepted skills for remote productions. The student will be able to:
22.01	Demonstrate skills in selecting production topics.
22.02	Determine quality of production topics.
22.03	Operate digital video production equipment.
22.04	Adhere to production deadlines.
22.05	Troubleshoot and maintain production equipment.
23.0	Demonstrate the ability to complete the pre-production process for an advanced video production project. The student will be able to:
23.01	Define the objective and intended audience for an advanced video production project (e.g., music video and documentary).
23.02	Understand the role of a specified distribution method planned distribution in the video production process.
23.03	Prepare a detailed pitch, storyboard, and script for an advanced video production project (e.g., music video and documentary).
23.04	Select cast and crew members for the production.
23.05	Plan and hold a pre-production meeting.
23.06	Create a schedule for the production project.
23.07	Scout locations and plan for any contingencies.
23.08	Select clothing, makeup, and accessories for use on camera in a specified production.
23.09	Determine the props, costumes, and other resources required for a production.
24.0	Demonstrate the ability to complete the production process for an advanced video production project. The student will be able to:
24.01	Operate video production equipment in studio and location (field) production environments.
24.02	Plan, execute, and record a video shoot to obtain the required action/footage and effects.
24.03	Perform production tasks that include advanced camera, lighting, and sound techniques.
25.0	Demonstrate the ability to complete the post-production process for an advanced video production project. The student will be able to:

25.01	Demonstrate the ability to mix multiple sources in a post-production setting.
25.02	Perform advanced sound edits and enhancements.
25.03	Perform advanced video edits and enhancements.
25.04	Enhance a digital video project by using multiple appropriate graphics and visual effects.
25.05	Determine special effects needed for a production.

Course Number: RTV0016
Occupational Completion Point: B
Digital Audio-Video Technology – 300 Hours

26.0	Plan, coordinate, and manage a video or webcast production. The student will be able to:
26.01	Produce and direct high-quality digital video production projects.
26.02	Utilize the equipment and technology appropriate for pre-production, production, and post-production of a digital video project.
26.03	Demonstrate knowledge of graphic image types, file formats, and the technical requirements for a production.
26.04	Demonstrate the ability to use manipulate lighting, audio, video, and graphics for intended effects.
27.0	Demonstrate an understanding of employability in the digital video production industry. The student will be able to:
27.01	Create a résumé, a list of references, and a letter of interest.
27.02	Identify common industry-related interview questions.
27.03	Conduct a job search.
27.04	Create a demo reel to showcase work samples to potential customers/clients.
28.0	Create and produce a digital video production. The student will be able to:
28.01	Plan a production.
28.02	Write a production.
28.03	Direct a production.
28.04	Record and edit a production.

28.05	Manage and oversee a team of peers to create a production.
29.0	Demonstrate an independent level of proficiency in a selected area of specialization. The student will be able to:
29.01	Survey area(s) for specialization.
29.02	Select an area(s) for specialization.
29.03	Execute all roles in selected specialization(s) independently.

Course Number: RTV0017 Occupational Completion Point: C Digital Video Direction and Production – 150 Hours	
30.0	Demonstrate advanced script writing techniques. The student will be able to:
30.01	Write a script for a program with minimum 10-minute program length.
30.02	Use the correct script format for the program selected (e.g., documentary and short film).
31.0	Apply skills by producing a program. The student will be able to:
31.01	Plan a digital video program with a minimum 10-minute program length.
31.02	Write a digital video program with a minimum 10-minute program length.
31.03	Direct a digital video program with a minimum 10-minute program length.
31.04	Record a digital video program with a minimum 10-minute program length.
31.05	Edit a digital video program with a minimum 10-minute program length.
31.06	Distribute a digital video program on an appropriate platform.
32.0	Perform advanced digital audio and video recording and editing operations. The student will be able to:
32.01	Utilize the internet to search and learn current industry editing and videography trends.
32.02	Demonstrate videography and editing proficiency through advanced techniques.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Basic Skills

In Career Certificate Programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Computation (Mathematics) and Communications (Reading and Language Arts). These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02, Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01, F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College System Institution must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91, F.S.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Program Title: Stage Production
Program Type: Career Preparatory
Career Cluster: Arts A/V Technology and Communication

Career Certificate Program

Program Number	K200200
CIP Number	0610020100
Grade Level	30,31
Program Length	300 Hours
Teacher Certification	Refer to the Program Structure section.
CTSO	SkillsUSA
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml
Basic Skills Level	N/A

Purpose

The purpose of this program is to prepare students for work in stage production.

This program offers a course that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster and; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of two occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	TPA0390	Stage Production Assistant	BLDG CONST @7 7G ELECTRICAL @7 7G	150 Hours
B	TPA0391	Stage Production Technician	TEC CONSTR @7 7G TEC ED 1@2 ENG&TEC ED1@2	150 Hours

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Understand and use appropriate theater terminology and language.
- 02.0 Demonstrate appropriate understanding of basic science.
- 03.0 Demonstrate appropriate math skills.
- 04.0 Demonstrate appropriate communication skills.
- 05.0 Demonstrate an understanding of Ohm's Law.
- 06.0 Demonstrate safe work practices.
- 07.0 Demonstrate proficiency in forklift operation, crane safety, rigging, fall protection, scaffolding and aerial lifts.
- 08.0 Perform the duties of a stage hand.
- 09.0 Maintain stage, lighting, sound, and shop equipment.
- 10.0 Install sound equipment for a performance.
- 11.0 Hang circuit and focus stage lights to the specifications required in a lighting design.
- 12.0 Perform the duties of a light board operator and follow spot operator.
- 13.0 Install and operate audio-visual/multimedia presentation equipment.
- 14.0 Demonstrate employability skills.
- 15.0 Demonstrate an understanding of entrepreneurship.
- 16.0 Function as part of a technical team in planning, implementing, and running the technical aspects of theatrical/entertainment productions.

**Florida Department of Education
Student Performance Standards**

Program Title: Stage Production
Career Certificate Program Number: K200200

Course Number: TPA0390
Occupational Completion Point: A
Stage Production Assistant – 150 Hours

01.0	Understand and use appropriate theater terminology and language. The student will be able to:
01.01	Define theater terminology (e.g., stage directions, upstage, downstage, center stage, strike, and load in).
01.02	Define stage proscenium, arena, and amphitheater.
01.03	Identify the different types of light fixtures.
01.04	Identify the working areas of the stage.
02.0	Demonstrate appropriate understanding of basic science. The student will be able to:
02.01	Understand molecular action as a result of temperature extremes, chemical reactions, and moisture content.
02.02	Draw conclusions or make inferences from data.
02.03	Identify health-related problems that may result from exposure to work-related chemicals and hazardous materials, and know the proper precautions required for handling such materials.
02.04	Understand pressure measurement in terms of PSI, inches of mercury, and KPA.
02.05	Identify the components that make electromotive force.
03.0	Demonstrate appropriate math skills. The student will be able to:
03.01	Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
03.02	Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
03.03	Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
03.04	Demonstrate an understanding of federal, state and local taxes and their computation.
04.0	Demonstrate appropriate communication skills. The student will be able to:

04.01	Write logical and understandable statements or phrases to accurately fill out forms/invoices commonly used in business and industry.
04.02	Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
04.03	Read and follow written and oral instructions.
04.04	Answer and ask questions coherently and concisely.
04.05	Read critically by recognizing assumptions and implications and by evaluating ideas.
05.0	Demonstrate an understanding of Ohm's Law. The student will be able to:
05.01	Calculate electrical circuits for voltage, amperage and resistance.
05.02	Calculate electrical circuits for wattage.
05.03	Determine the voltage drop of a circuit in a single-phase and three-phase system.
06.0	Demonstrate safe work practices. The student will be able to:
06.01	Identify safety rules for stage and shop equipment.
06.02	Identify health and environmental hazards of materials used in stage production.
06.03	Select and use the appropriate protective clothing and equipment when working in a shop or stage environment.
06.04	Use shop and stage equipment in accordance with both manufacturer and industry safety standards.
06.05	Identify and correct unsafe work practices.
06.06	Understand the national electric code requirements for grounding and ground fault protection.
06.07	Demonstrate knowledge of the Federal Hazard Communication regulation 29 CFR 1910.1200.
07.0	Demonstrate proficiency in forklift operation, crane safety, rigging, fall protection, scaffolding and aerial lifts. The student will be able to:
07.01	Operate a forklift safely using proper lifting techniques.
07.02	Understand the proper signals for crane operation.
07.03	Connect rigging to loads by using proper knot configurations.
07.04	Know the correct procedures for the use of personal protective equipment and when to apply the procedures.
07.05	Operate a chain hoist and electrical wench.

08.0	Perform the duties of a stage hand. The student will be able to:
08.01	Operate equipment commonly found in performance venues.
08.02	Use hand and power tools commonly found in scene shops.
08.03	Determine methods for scenery repair within a limited time frame.
08.04	Perform all duties in a disciplined manner as required by the demands of a performance.
08.05	Install and operate special effects such as fog, pyrotechnics and automated devices.
08.06	Assume crew chief responsibilities.

Course Number: TPA0391
Occupational Completion Point: B
Stage Production Assistant – 150 Hours

09.0	Maintain stage lighting, sound and shop equipment. The student will be able to:
09.01	Calibrate and operate test equipment through all modes of operation as necessary for the maintenance of systems.
09.02	Locate malfunctions using applicable diagnostic methods.
09.03	Read and understand technical manuals.
09.04	Record and maintain documentation on equipment including manufacturer's warranties and parts inventories.
09.05	Troubleshoot electrical circuits by using multimeters.
10.0	Install sound equipment for a performance. The student will be able to:
10.01	Identify sound equipment used in productions.
10.02	Assemble various components under the direction of an audio engineer.
10.03	Install a sound system resulting in optimal performance and safety of the equipment.
11.0	Hang circuit and focus stage lights to the specifications required in a lighting design. The student will be able to:
11.01	Read a standard lighting plot.
11.02	Read a standard instrument schedule.

11.03	Identify stage lighting equipment.
11.04	Hang and circuit lights for a stage production.
11.05	Focus lights for a stage production.
11.06	Hang and set control parameters for intelligent lighting fixtures.
11.07	Calculate the number of fixtures allowed on a circuit.
11.08	Draft working drawings when given a ground plan and designer's elevations.
12.0	Perform the duties of a light board operator and follow spot operator. The student will be able to:
12.01	Make and read a lighting cue sheet.
12.02	Program and execute cues on a computerized lighting console in both rehearsal and performance.
12.03	Execute cues for intelligent lighting.
12.04	Execute cues using a follow spot in rehearsal and performance.
13.0	Install and operate audio-visual/multimedia presentation equipment. The student will be able to:
13.01	Set up and operate basic video production equipment (e.g., camcorders, studio cameras, video monitors, video decks, switchers, video distribution amplifiers).
13.02	Set up and operate a basic 35 mm slide presentation in both single and multi-projector configurations.
13.03	Set up and operate a variety of video projection systems.
13.04	Install and operate data projection equipment.
13.05	Determine layout for an A/V show including screen and equipment location.
13.06	Select and install appropriate cable and interfaces for A/V set up.
13.07	Perform basic troubleshooting on A/V systems.
14.0	Demonstrate employability skills. The student will be able to:
14.01	Conduct a job search.
14.02	Secure information about a job.
14.03	Identify documents that may be required when applying for a job interview.

14.04	Complete a job application form correctly.
14.05	Demonstrate competence in job interview techniques.
14.06	Develop a résumé.
14.07	Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
14.08	Identify acceptable work habits.
14.09	Demonstrate knowledge of how to make job changes appropriately.
14.10	Demonstrate acceptable employee health habits.
15.0	Demonstrate an understanding of entrepreneurship. The student will be able to:
15.01	Define entrepreneurship.
15.02	Describe the importance of entrepreneurship to the American economy.
15.03	List the advantages and disadvantages of business ownership.
15.04	Identify the risks involved in business ownership.
15.05	Identify the necessary personal characteristics of a successful entrepreneur.
15.06	Identify the business skills needed to operate a small business efficiently and effectively.
16.0	Function as part of a technical team in planning, implementing and running the technical aspects of theatrical/entertainment productions. The student will be able to:
16.01	Perform as a member of a technical team within the framework of an organized production.
16.02	Schedule job assignments in order to meet production deadlines.
16.03	Apply accepted principles of theater technology to production situations.
16.04	Adapt learned skills and generate new approaches in order to solve unique production problems.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Program Title: Graphic Communications and Printing Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Career Certificate Program		
Program Number	K300100	
CIP Number	0650040217	
Grade Level	30, 31	
Program Length	1650 hours	
Teacher Certification	Refer to the Program Structure section.	
CTSO	SkillsUSA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level	Computation (Mathematics): 9	Communications (Reading and Language Arts): 9

Purpose

The purpose of this program is to prepare students for initial employment in the Printing and Graphic Communications industry.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The course content includes, but is not limited to, an understanding of the printing and graphic communications industry, digital production printing and prepress operations, contemporary and emergent printing technologies, and the application of finishing and distribution processes.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of five occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	GRA0041	Printing and Graphic Communications	PRINTING @7 7G	450 hours
B	GRA0042	Digital Production Printing		150 hours
C	GRA0017	Digital Prepress Operations		450 hours
D	GRA0045	Offset Printing Technology		450 hours
E	GRA0046	Finishing and Distribution Processes		150 hours

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate understanding of safety and first aid practices.
- 02.0 Demonstrate understanding of graphic communications occupations and processes.
- 03.0 Demonstrate proficiency in art and copy preparation.
- 04.0 Demonstrate proficiency in prepress/imaging operations.
- 05.0 Demonstrate proficiency in image assembly/platemaking.
- 06.0 Demonstrate proficiency in performing basic offset press operations.
- 07.0 Demonstrate proficiency in basic finishing and bindery operations.
- 08.0 Demonstrate appropriate math skills.
- 09.0 Demonstrate proficiency in performing basic imposition platemaking and digital printer competencies.
- 10.0 Demonstrate proficiency in the operation of a digital production printing system.
- 11.0 Demonstrate proficiency in basic electronic imaging competencies.
- 12.0 Demonstrate proficiency in the use of type and typography.
- 13.0 Demonstrate proficiency in using page layout operations.
- 14.0 Demonstrate proficiency in scanning operations.
- 15.0 Demonstrate an understanding of a vector-based graphics program.
- 16.0 Demonstrate proficiency in electronic prepress operations.
- 17.0 Demonstrate proficiency in the operation of a basic offset press.
- 18.0 Demonstrate proficiency in performing basic finishing and distribution competencies.

**Florida Department of Education
Student Performance Standards**

Program Title: **Graphic Communications and Printing Technology**
Career Certificate Program Number: **K300100**

Course Number: GRA0041
Occupational Completion Point: A
Printing and Graphic Communications – 450 Hours

01.0 Demonstrate understanding of safety and first aid practices. The student will be able to:

01.01 Identify the location of fire safety equipment.

01.02 Describe the proper use of fire safety equipment.

01.03 List safety rules involving flammable liquids.

01.04 List the steps to be taken in case of injury in the lab.

01.05 Identify locations of first aid kits and eye wash stations.

01.06 Discuss the importance of the Material Safety Data Sheets (MSDS).

01.07 Identify protective safety equipment (e.g., gloves, goggles, ear plugs).

01.08 Practice proper safety procedures when operating equipment.

01.09 Practice approved shop dress code for safe operation; include the necessary personal safety equipment.

01.10 Pass a general lab safety test.

01.11 Demonstrate acceptable employee health habits.

01.12 Demonstrate knowledge of the “Right-to-Know” law.

01.13 Pass a safety test related to the individual’s specialty area(s).

01.14 Practice approved methods for the disposal of waste materials.

01.15 Read, comprehend and follow instructions on warning labels.

01.16 Demonstrate common sense when working with others.

01.17 Demonstrate a working knowledge of the safety color code.

02.0	Demonstrate understanding of graphic communications occupations and processes. The student will be able to:
02.01	Define the role of graphics in a free enterprise system.
02.02	Identify printing markets and types of printing businesses.
02.03	List the rank of the printing industry among other industries.
02.04	Identify the major printing processes.
02.05	List the advantages of each major process.
02.06	List the disadvantages of each major process.
02.07	Identify the products produced by each major process.
02.08	List the business flow of printing from initial need to final product.
02.09	List the technical production flow from idea to finished product.
02.10	Identify major occupations in the graphic arts.
02.11	List the primary responsibilities for each occupation.
02.12	Identify basic salary/wage expectation ranges for the local area.
03.0	Demonstrate proficiency in art and copy preparation. The student will be able to:
03.01	Demonstrate how to prepare thumbnail layouts.
03.02	Demonstrate how to prepare rough layouts.
03.03	Demonstrate how to prepare comprehensive layouts; include a finished working dummy.
03.04	Employ the use of printer's measurements to compute inches, fractions, points, picas, decimals, percentages, and proportions.
03.05	Check and compare the completed original to comprehensive layouts for final proofing.
04.0	Demonstrate proficiency in prepress/imaging operations. The student will be able to:
04.01	Identify basic equipment and tools and the safety rules pertaining to prepress/imaging operations.
04.02	Demonstrate how to choose type using the correct size and format.
04.03	Identify the fundamentals and uses of type.

04.04	Identify the types of items that can be designed and produced using a page layout program.
04.05	Demonstrate keyboarding skills.
04.06	State how to organize a file management system for opening, copying, saving and deleting files.
04.07	Demonstrate file management operations for opening, copying, saving and deleting files.
04.08	Demonstrate how to log-on/boot-up and print from a page layout program; demonstrate a functional knowledge of computer commands/codes/menus/palettes for the software in use.
04.09	Demonstrate how to set text with appropriate margins, formatting, gutters, leading, headings, etc.
04.10	Demonstrate how to flow copy from a word processing program according to job specifications.
05.0	Demonstrate proficiency in image assembly/platemaking. The student will be able to:
05.01	Identify platemaking equipment and tools for offset metal plates.
05.02	Identify plate material types and processing chemicals for making offset metal plates.
05.03	Demonstrate how to produce a correctly exposed and processed metal plate for offset printing.
05.04	Identify computer-to-plate platemaking equipment.
06.0	Demonstrate proficiency in performing basic offset press operations. The student will be able to:
06.01	Identify basic offset duplicator parts and operations.
06.02	Identify basic safety and operation procedures for an offset duplicator or a single-color printing press.
06.03	Demonstrate basic setup procedures for printing a single-color job.
06.04	Produce a printed single-color job using an offset duplicator.
07.0	Demonstrate proficiency in basic finishing and bindery operations. The student will be able to:
07.01	Identify the operational and safety parts of a paper cutter.
07.02	Identify the grain direction of paper.
07.03	Demonstrate how to calculate basic paper cuts from a stock sheet.
07.04	Demonstrate how to draw a master cutting diagram for making cuts.
07.05	Demonstrate how to make accurate paper cuts using a mechanized paper cutter.

07.06	Identify basic paper types, weights, grades and classifications used in the printing industry.
07.07	Identify padding materials.
07.08	Demonstrate how to produce correctly made pads of paper.
07.09	Identify stapling and stitching equipment, materials and supplies.
07.10	Demonstrate how to produce side-stitched, saddle-stitched, and stapled products.
07.11	Identify punching/drilling equipment and hand tools.
07.12	Demonstrate how to measure three-ring notebook pages for drilling.
07.13	Demonstrate how to make holes for three-ring notebooks.
07.14	Identify folding equipment and hand tools.
07.15	Identify basic folds for printed products.
07.16	Demonstrate how to make a single fold using an automatic folding machine.
07.17	Identify collating equipment and hand tools.
07.18	Demonstrate how to make sets of paper using collating equipment in the correct sequence.
07.19	Demonstrate how to hand collate sets in proper sequence.
07.20	Identify the cut products and the basic procedure for die cutting.
07.21	Identify hot foil stamped products and the basic equipment, materials, and procedures for foil stamping.
08.0	Demonstrate appropriate math skills. The student will be able to:
08.01	Demonstrate how to solve addition, subtraction, multiplication and division of whole numbers.
08.02	Demonstrate how to solve addition, subtraction, multiplication and division of fractions.
08.03	Demonstrate how to solve addition, subtraction, multiplication and division of decimals.
08.04	Demonstrate how to solve fraction to decimal and decimal to fraction conversion problems.
08.05	Demonstrate how to solve decimal to percent and percent to decimal conversion problems.
08.06	Demonstrate how to solve basic ratio and proportion problems.

08.07	Demonstrate how to solve basic linear measurement problems.
08.08	Demonstrate how to solve basic inches to picas and picas to inches conversion problems.
08.09	Demonstrate how to solve inches to points and points to inches conversion problems.
08.10	Demonstrate how to solve cost-calculating problems.

Course Number: GRA0042 Occupational Completion Point: B Digital Production Printing – 150 Hours	
09.0	Demonstrate proficiency in performing basic imposition platemaking and digital printer competencies. The student will be able to:
09.01	Read and comprehend production information on a job jacket/ticket.
09.02	Demonstrate the ability to create a single-color layout for an envelope.
09.03	Demonstrate the ability to create a single-color layout for a work-and-turn imposition.
09.04	Demonstrate the ability to create a single-color layout for a work-and-tumble imposition.
09.05	Demonstrate the ability to create a single-color layout for a business card.
09.06	Demonstrate the ability to create a single-color layout for a 4-page sheetwise imposition.
09.07	Demonstrate the ability to assemble a single-color layout for an 8-page signature.
09.08	Demonstrate how to inspect and compare proofs to originals.
09.09	Identify the equipment, tools, and materials used in platemaking operations and the parts, functions, and safety rules related to their operation.
09.10	Apply basic math skills to platemaking operations.
09.11	Identify the different plate materials, types and processing chemicals and the methods of use for each.
09.12	Demonstrate how to expose, process and preserve metal plates.
09.13	Demonstrate how to make additions, deletions and repairs to metal plates.
09.14	Demonstrate how to inspect and compare plates to proofs.
09.15	Demonstrate how to properly handle, file, store and retrieve flats and plates.

10.0	Demonstrate proficiency in the operation of a digital production printing system. The student will be able to:
10.01	Use the system interface to adjust image tone reproduction quality.
10.02	Program and run a job for cardstock.
10.03	Program and run a job for folded signatures.
10.04	Program and set-up the various inline finishing and binding options.
10.05	Program and run productivity features (e.g., cover sheets, job separator sheets).
10.06	Program and run jobs on a digital color printing system.
10.07	Evaluate and adjust color print quality on a digital color printing system.
10.08	Apply troubleshooting and problem-solving strategies to digital printing systems.
10.09	Demonstrate how to produce a 2-sided, 3-panel brochure.
10.10	Demonstrate how to produce a 4-page newsletter on a digital printing system.

Course Number: GRA0017
Occupational Completion Point: C
Digital Prepress Operations – 450 Hours

11.0	Demonstrate proficiency in basic electronic imaging competencies. The student will be able to:
11.01	Read and comprehend production information on a job jacket/ticket.
11.02	Identify the various types of items that can be designed and produced using desktop publishing.
11.03	Identify the basic principles of design (e.g., unity, contrast, page proportions, and balance).
11.04	Demonstrate how to incorporate basic design principles in hand-drawn sketches and measured layouts.
11.05	Identify line copy.
11.06	Identify continuous tone and halftone copy.
11.07	Identify basic process color principles and four kinds of color printing.
11.08	Demonstrate understanding of electronic color-proofing techniques.

11.09	Identify basic desktop publishing equipment.
11.10	Define the limitations and capabilities of desktop publishing.
11.11	Define the differences in quality of photo-processed output and laser printer output.
11.12	Demonstrate understanding of postscript software capabilities.
11.13	Define the operation of the hardware components of a computer aided publishing system.
11.14	Demonstrate how to select appropriate software for word processing, graphics, scanning and page layout.
11.15	Demonstrate a keyboard typing proficiency of a minimum of 30 WPM.
11.16	State how to organize a file management system for opening, copying, saving and deleting files.
11.17	Demonstrate file management operations for opening, copying, saving and deleting files.
11.18	Demonstrate how to prepare a series of hand-drawn sketches for layouts incorporating appropriate marks (e.g., gutters, register marks, and fold lines).
11.19	Demonstrate how to prepare a dummy for a multi-page signature.
11.20	Demonstrate an understanding of data exchange.
12.0	Demonstrate proficiency in the use of type and typography. The student will be able to:
12.01	Demonstrate how to measure copy/text in points and picas using a line gauge.
12.02	Demonstrate how to measure type using a type-fitting gauge.
12.03	Demonstrate how to identify x-height, meanline, baseline, ascenders, descenders, and the roles of each in measuring and designing with type.
12.04	Demonstrate how to identify caps, lowercase, uppercase, small caps and ligatures.
12.05	Define dingbats, bullets, rules, and symbols and the uses of each in publications.
12.06	Demonstrate how to distinguish between display (headline) type and body (text) type by point size and style.
12.07	Demonstrate how to identify basic type styles and the uses of each style.
12.08	Determine the weight and posture of type.
12.09	Demonstrate how to distinguish between <i>serif</i> and <i>sans-serif</i> type styles.

12.10	Define letter spacing and kerning of type characters.
12.11	Define <i>word spacing</i> and the relationship of <i>em</i> and <i>en</i> in paragraph spacing.
12.12	<i>Define line spacing and</i> explain the measurement principles for the leading of text.
12.13	Define type arrangements: flush left, ragged right, flush right, ragged left, centered, justified, and forced justified.
12.14	Define and demonstrate copy fitting.
13.0	Demonstrate proficiency in using page layout operations. The student will be able to:
13.01	Demonstrate how to prepare rough layouts.
13.02	Demonstrate how to markup a copy for the production of a printed piece.
13.03	Demonstrate how to select appropriate page layout software for a given job.
13.04	Demonstrate how to log-on/boot-up and print out from a page layout program; demonstrate a functional knowledge of computer commands/codes/menus/palette for the software in use.
13.05	Demonstrate text alignment, element positioning and the rules of page design for printed material.
13.06	Demonstrate how to set-up column grids for an electronic page layout according to job specifications.
13.07	Demonstrate how to set-up/select appropriate pagination for a given job.
13.08	Demonstrate the uses of headers and footers.
13.09	Demonstrate how to set text with appropriate margins, formatting, gutters, leading, headings, etc.
13.10	Demonstrate a proficiency in conducting basic search operations.
13.11	Demonstrate how to place copy from a word processing program into a page layout program according to job specifications.
13.12	Demonstrate how to proofread, edit and make corrections/adjustments to copy on screen.
13.13	Demonstrate how to download fonts.
13.14	Demonstrate how to transfer graphics, rules, and dingbats from an existing file into a publication.
13.15	Demonstrate the procedure for cropping graphics electronically.
13.16	Use graphics and text to create a 2-sided, 3-panel brochure for publication.
13.17	Demonstrate how to create a 4-page newsletter using windows, blocks, text, graphics, frames and headings.

13.18	Demonstrate how to create a 2-page newsletter using drop caps for paragraph openings, wraparound (run-around) and graphics.
13.19	Use tints, reverses, and manipulated type for effect to create a printed piece.
13.20	Demonstrate how to produce a multicolor flyer using electronic spot color separations.
13.21	Demonstrate knowledge of the capabilities, advantages, and disadvantages of available page layout programs.
13.22	Demonstrate the use of an electronic dictionary, spell checker, and automatic hyphenation.
14.0	Demonstrate proficiency in scanning operations. The student will be able to:
14.01	Identify the hardware, basic components and operations associated with scanners.
14.02	Identify basic scanner software and its uses and limitations.
14.03	Demonstrate appropriate scanner/program operations for continuous tone copy.
14.04	Demonstrate how to place scanned graphics/photos into existing page layout program.
15.0	Demonstrate understanding of a vector-based graphics program. The student will be able to:
15.01	Demonstrate how to log-on/boot-up a vector-based graphics program; demonstrate a functional knowledge of commands/codes/menus/hand tools and procedures for their uses.
15.02	Use a graphics program to draw a design appropriate for a given job.
15.03	Use tints, fills, and paint in a graphics program to create a design for a given job.
15.04	Use manipulated type (e.g., rotated, circled, extended) to create a design for a publication.
15.05	Demonstrate how to trace a drawing/photograph using a graphics program.
15.06	Demonstrate how to create a design/publication using digital clip art.
16.0	Demonstrate proficiency in electronic prepress operations. The student will be able to:
16.01	Describe the application of digital photography in electronic imaging.
16.02	List the capabilities and functions of image setters.
16.03	Identify and compare digital proofs.
16.04	Identify and compare networking systems.
16.05	Identify the current systems/techniques for outputting files directly to plate material.

16.06	Demonstrate an understanding of page description languages (e.g., PostScript).
16.07	Compare the leading operating systems based on performance, uses and capabilities.
16.08	Explain storage guidelines and limitations.
16.09	List the advantages and disadvantages of different storage media options.
16.10	List the use and capabilities of storage devices for the transport and storage of electronic imaging work.
16.11	Describe the strengths and weaknesses of TIFF, EPS, PICT and other formats in a page description language environment.
16.12	Demonstrate how to convert files from PC to Mac formats.
16.13	Demonstrate how to use a file compression utility for file transfer or storage.
16.14	Describe the differences between TrueType, OpenType and PostScript fonts.
16.15	Demonstrate how to use a telecommunications program and a modem to transfer files.
16.16	Demonstrate how to create a single-color layout using clip art.
16.17	Demonstrate how to create a single-color layout using work-and-turn.
16.18	Demonstrate how to change contrast using tint screens and shading techniques.
16.19	Demonstrate how to create a logo design on a computer and integrate it into a brochure design.
16.20	Demonstrate how to produce special effects type using a graphics application.
16.21	Demonstrate how to produce a job on the computer using electronic imposition.
16.22	Demonstrate how to create a job that incorporates electronic trapping.
16.23	Demonstrate how to produce a multicolor job that includes scans, text and spot color artwork.
16.24	Demonstrate how to prepare page layout files containing graphic images for remote output.
16.25	Demonstrate how to follow instructions to produce, modify or output files according to customer-supplied criteria.
16.26	Demonstrate how to use optical character recognition (OCR) software to capture text.
16.27	Demonstrate how to calibrate a desktop color scanner.
16.28	Demonstrate how to produce a color scan.

16.29	Demonstrate how to use an image manipulation program to perform basic color correction and basic image cloning.
16.30	Demonstrate how to calibrate a color monitor.

Course Number: GRA0045
Occupational Completion Point: D
Offset Printing Technology – 450 Hours

17.0	Demonstrate proficiency in the operation of a basic offset press. The student will be able to:
17.01	Identify the equipment and materials used in offset press operations, their parts and functions, and the safety rules related to their operation.
17.02	Apply basic principles of offset lithography pertaining to the physical and chemical properties of ink components (pigment, vehicle, and dryer).
17.03	Apply basic principles of offset lithography pertaining to dampening systems (ducted and continuous).
17.04	Apply basic principles of offset lithography pertaining to the chemical components of fountain solutions (acid, alkaline, and neutral).
17.05	Apply basic principles of offset lithography pertaining to pH-control and its effects on the lithographic process.
17.06	Apply basic principles of offset lithography pertaining to interrelationships on the process of paper (coated and uncoated and various grades within).
17.07	Demonstrate how to determine the grain direction of paper.
17.08	Demonstrate how to handle and jog paper stock (wire/felt, watermarks, carbonless sequence).
17.09	Demonstrate how to identify paper weight, coating and sizes.
17.10	Demonstrate how to identify paper problems, curling, dust, moisture, flaring, etc.
17.11	Apply basic principles of offset lithography pertaining to the interrelationships of textured or smooth paper, plastic, metal plates, and conventional or compressible blankets.
17.12	Apply basic principles of offset lithography pertaining to ink and its drying properties in relation to fountain solution and the plate and paper used (effects of ink film thickness, drying time and set off; the problems associated with inappropriate use of spray powder).
17.13	Apply basic principles of plate preservation after presswork for long-term storage (use of gum arabic and asphaltum).
17.14	Demonstrate how to prepare a press for operation by reviewing job-ticket specifications and then selecting the appropriate press and materials.
17.15	Demonstrate how to prepare a press for operation based on the interrelationships of lithographic processes.
17.16	Demonstrate how to mix fountain solution from concentrate.

17.17	Demonstrate how to mix ink to color matching system specifications (e.g., Pantone Color Matching System).
17.18	Demonstrate how to introduce ink and fountain solution to the press in proper sequence.
17.19	Demonstrate how to set-up and adjust the feeder to paper specifications (air blast, vacuum, choke).
17.20	Demonstrate how to set-up and adjust the register system to single sheet, stream fed, side guide, and head register.
17.21	Demonstrate how to set-up and adjust delivery (chute or chain).
17.22	Demonstrate how to mount a blanket cylinder (and pack if necessary) and adjust to press specifications.
17.23	Demonstrate how to set an impression cylinder to paper thickness and press specifications.
17.24	Demonstrate how to set and adjust the pressure of ink and water rollers to press specifications.
17.25	Demonstrate how to make-ready a press to ensure ink and water balance for uniform coverage, volume and replenishment of ink, image position, cylinder pressure, and sheet registration.
17.26	Demonstrate how to make additions, deletions and repairs to an offset plate.
17.27	Demonstrate how to inspect and evaluate the final make-ready sheet to job-ticket specifications and obtain proof approval to run.
17.28	Demonstrate how to set spray powder.
17.29	Demonstrate how to produce the required number of press sheets to meet job-ticket specifications.
17.30	Demonstrate how to preserve a plate for long-term storage.
17.31	Demonstrate how to perform press wash-up and roller treatment.
17.32	Demonstrate how to perform press maintenance to manufacturer's specifications.
17.33	Demonstrate how to apply basic principles of offset press operations with regard to work-and-turn, work-and-tumble and sheetwise printed products.
17.34	Demonstrate how to produce a tight register one-color project.
17.35	Demonstrate how to produce a tight register one-color or two-color, pre-collated carbonless project.
17.36	Demonstrate how to produce a two-color tight register project.
17.37	Demonstrate how to print a two-color job on a duplicator using a T-head.
17.38	Demonstrate how to produce a one-color or two-color tight register envelope project.

17.39	Demonstrate how to produce a tight register one-color metallic ink project.
17.40	Demonstrate how to produce a tight register one-color or two-color folding two-sided project.
17.41	Demonstrate how to produce a multicolor tight register project.
17.42	Demonstrate an understanding of and the ability to identify troubleshooting problems on a duplicator.
17.43	Identify and describe direct-imaging technologies.
17.44	Demonstrate how to clean and secure a duplicator for downtime.

Course Number: GRA0046
Occupational Completion Point: E
Finishing and Distribution Processes – 150 Hours

18.0	Demonstrate proficiency in performing basic finishing and distribution competencies. The student will be able to:
18.01	Demonstrate how to read and comprehend production information on a job jacket/ticket.
18.02	Demonstrate how to identify the equipment and materials used in finishing and distribution operations, and the parts, functions, and safety rules related to their operation.
18.03	Demonstrate how to apply basic math skills to binding and distribution operations.
18.04	Demonstrate how to prepare a folding dummy from a press sheet according to job ticket specifications and the approved proof.
18.05	Demonstrate how to set-up and operate a folder in accordance with job ticket specifications and the folding dummy.
18.06	Demonstrate how to use folding equipment to produce single, gate and accordion folds.
18.07	Describe and identify right-angle folds.
18.08	Apply the basic principles of finishing and distribution to folded/bound signature impositions to allow for lips, trims and bleeds according to saddle-stitch and side-stitch binding methods.
18.09	Identify and explain slitting, perforating and scoring functions and equipment pertaining to folding operations.
18.10	Explain how to use and set-up cutters.
18.11	Demonstrate how to prepare rule-out of a press sheet for finishing operations according to job ticket specifications and the approved proof.
18.12	Demonstrate how to set-up and operate a cutter in accordance with rule-out.

18.13	Demonstrate how to square substrate.
18.14	Identify and describe problems with substrate.
18.15	Determine the proper maintenance procedures for paper cutters.
18.16	Explain how to change the blade on a paper cutter.
18.17	Define and identify the most commonly used types of paper.
18.18	Identify paper types based on the printing, folding and binding characteristics of each type.
18.19	Demonstrate how to hand-jog 8.5" X 11" substrate.
18.20	Demonstrate how to hand-jog 17" X 22" or larger substrate.
18.21	Demonstrate how to machine-jog substrate.
18.22	Describe and identify offline finishing systems.
18.23	Explain the fundamentals of saddle-stitching and perfect binding.
18.24	Identify and explain the uses of automated sorting and labeling equipment.
18.25	Define and identify mail class rates (e.g., bulk, presorted).
18.26	Identify and explain the quality control methods for bar codes in relation to postal standards.
18.27	Identify and explain embossing procedures and equipment.
18.28	List the common problems encountered with embossing.
18.29	Identify the components of case, spiral and perfect bound books.
18.30	Identify and describe modern book binding equipment; compare to hand-binding techniques.
18.31	Demonstrate how to store and properly handle substrates.
18.32	Define and identify UV coatings.
18.33	List the advantages and disadvantages of UV coatings.
18.34	Demonstrate how to estimate the cost of materials and production for performing bindery operations (cutting, scoring, folding, packaging, and coating).
18.35	Demonstrate how to set-up and operate a side-stitcher and a saddle-stitcher.

18.36	List the techniques used to control waste production and disposal in a modern bindery.
18.37	Identify and describe spiral, comb and wire binding equipment and supplies.
18.38	Describe tipping procedures.
18.39	Demonstrate how to perform preventive maintenance on binding and finishing equipment.
18.40	Demonstrate methods of counting substrate (machine, measurement, weight, rapid multiple-sheet manual counting by fives).
18.41	Describe how to collate flat sheets.
18.42	Demonstrate how to set-up and operate a paper drill for a standard loose-leaf binder.
18.43	Identify and describe packaging and shrink-wrapping equipment.
18.44	Demonstrate how to package and identify a completed job according to job specifications.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Basic Skills

In Career Certificate Programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Computation (Mathematics) and Communications (Reading and Language Arts). These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02, Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01, F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College System Institution must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91, F.S.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Program Title: Television Production Technology
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Career Certificate Program		
Program Number	K300300	
CIP Number	0610020218	
Grade Level	30, 31	
Program Length	1200 hours	
Teacher Certification	Refer to the Program Structure section.	
CTSO	SkillsUSA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level	Computation (Mathematics): 9	Communications (Reading and Language Arts): 9

Purpose

The purpose of this program is to prepare students for initial employment as television production operators, television broadcast technicians, camera operators, other professional/paraprofessional technicians, video recording engineers, and audio recording engineers.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, communication skills; leadership skills; human relations and employability skills; safe and efficient work practices; and preparation to assume responsibility for overall production of television studio activities (e.g., scripts, lighting, shooting and directing, electronic news gathering, and field production).

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of three occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	RTT0514	Studio Assistant	BUS ED 1 @2 @4	450 hours
B	RTT0516	Studio Technician	TEC ED 1 @ 2	450 hours
C	RTT0109	Television Production Operations	ENG&TEC ED1@2 TV PRO TEC @ 7 7G	300 hours

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

Studio Assistant

- 01.0 Conduct online research for television production.
- 02.0 Interpret scripts for television production.
- 03.0 Demonstrate understanding of basic industry terminology and acronyms.
- 04.0 Apply knowledge of the television production technology program procedures.
- 05.0 Collaborate with others as an effective member of a television production team.
- 06.0 Use basic television production equipment.
- 07.0 Identify lighting needs for a planned production.
- 08.0 Perform basic audio and video recording operations.
- 09.0 Operate an editing system.
- 10.0 Write a broadcast style script.
- 11.0 Stage a set as directed for television production.
- 12.0 Perform lighting activities for a planned production.
- 13.0 Use basic equipment in a television production studio.
- 14.0 Operate television studio audio control systems.
- 15.0 Perform character generation (CG).
- 16.0 Operate editing software.
- 17.0 Utilize the Internet to gather data for a planned production.
- 18.0 Demonstrate industry accepted skills for studio production.
- 19.0 Assemble a lighting set up using modifiers (e.g., flags, reflectors, diffusers or artificial lights).
- 20.0 Demonstrate correct use of equipment used in television production.
- 21.0 Perform intermediate digital audio and video recording and editing operations.

Studio Technician

- 22.0 Function as a member of a production team.
- 23.0 Select special effects lighting for a planned production.
- 24.0 Create a variety of television programming.
- 25.0 Research and select one or more areas of television production for specialization.
- 26.0 Perform advanced audio and video recording and editing operations in a studio situation.
- 27.0 Create a television program.
- 28.0 Demonstrate an independent level of proficiency in the selected area of specialization.
- 29.0 Demonstrate advanced scriptwriting techniques.
- 30.0 Apply production skills by producing a program.
- 31.0 Perform advanced digital audio and video recording and editing operations.

Television Production Operations

- 32.0 Perform basic maintenance for lighting instruments.
- 33.0 Perform Electronic News Gathering (ENG) and Electronic Field Production (EFP) equipment functions.
- 34.0 Translate written script into a full television production.
- 35.0 Create and maintain a portfolio with embedded production media.
- 36.0 Function at an independent level with proficiency in one area of television production.
- 37.0 Research a specific career in television.

**Florida Department of Education
Student Performance Standards**

Program Title: Television Production
Career Certificate Program Number: K300300

Course Number: RTT0514
Occupational Completion Point: A
Studio Assistant – 450 Hours

01.0 Conduct online research for television production. The student will be able to:

01.01 Complete an Internet search for viable information used in scripting a project.

01.02 Identify valid websites for information retrieval.

02.0 Interpret scripts for television production. The student will be able to:

02.01 Identify a script by format, function and utilization.

02.02 Define the terminology used in script writing.

02.03 Specify the steps leading to a script.

02.04 Write a script in an appropriate format.

03.0 Demonstrate understanding of basic industry terminology and acronyms. The student will be able to:

03.01 Define trade terminology, including the four steps of the production process.

03.02 Define trade abbreviations and acronyms as appropriate.

04.0 Apply knowledge of the television production technology program procedures. The student will be able to:

04.01 Follow classroom procedures.

04.02 State and apply general safety rules for operation of equipment.

04.03 Transport equipment safely and securely.

04.04 Store equipment in appropriate locations.

05.0 Collaborate with others as an effective member of a television production team. The student will be able to:

05.01 Understand the job functions of a television production team.

05.02	Give and follow directions.
05.03	Function as a member of a production team.
05.04	Set and adhere to production deadlines established by others.
05.05	Critique and analyze a production.
05.06	Analyze lighting needs for a production.
05.07	Set-up appropriate lighting for a production.
06.0	Use basic television production equipment. The student will be able to:
06.01	Load, cue, transfer, record and play assets from various media.
06.02	Set up, turn on and operate a video camera.
06.03	Set up, turn on, and operate audio production equipment.
06.04	Identify and demonstrate picture composition principles (e.g., rule of thirds, leading lines, etc.).
06.05	Identify types of video and audio connectors.
06.06	Identify, select and demonstrate use of a microphone for situation (pick-up pattern, directionality, etc.).
06.07	Identify the qualities of a good audio track.
06.08	Identify and select appropriate equipment for a specific production.
06.09	Select and place microphones for maximum effect.
06.10	Describe set up and operate video and audio input and output devices.
06.11	Describe function of video and audio monitors.
07.0	Identify lighting needs for a planned production. The student will be able to:
07.01	Describe types of lighting fixtures.
07.02	Identify parts of lighting fixtures and accessories.
07.03	Analyze lighting needs for a production.
07.04	Set-up appropriate lighting for a production.

08.0	Perform basic audio and video recording operations. The student will be able to:
08.01	Describe operational parts of a video recording device.
08.02	Operate video recording devices to record and playback.
08.03	Perform studio editing procedures for both audio and video production needs (e.g., switcher, mixer, etc.).
08.04	Transfer and log video.
09.0	Operate an editing system. The student will be able to:
09.01	Prepare graphics for production.
09.02	Combine elements into a program.
09.03	Select the best source material, such as voiceover (VO), sound on tape (SOT), and B-roll, to achieve program goals.
09.04	Control audio mix and effects.
09.05	Edit a shot sequence or story for continuity.
10.0	Write a broadcast style script. The student will be able to:
10.01	Plan and produce a storyboard.
10.02	Specify steps leading to broadcast scripts.
10.03	Write a broadcast script including location information, camera moves and dialogue.
11.0	Stage a set as directed for television production. The student will be able to:
11.01	Dress a set for a television production.
11.02	Inspect for and correct safety concerns.
11.03	Sketch a set plan.
12.0	Perform lighting activities for a planned production. The student will be able to:
12.01	Describe functions of the master lighting panel and dimmer board.
12.02	Draw and label a diagram for a lighting plot.
12.03	Assemble appropriate lighting using light modifiers (e.g., reflectors, flags, or artificial lighting).

13.0	Use basic equipment in a television production studio. The student will be able to:
13.01	Determine appropriate audio and video cables for use.
13.02	Troubleshoot a bad cable connection.
13.03	Set up video and audio monitors for production.
13.04	Describe function of a Camera Control Unit (CCU).
13.05	Describe parts of an audio mixing console.
13.06	Operate a teleprompter.
13.07	Operate an audio mixing console.
13.08	Operate video switcher.
13.09	Direct participants in production of a program.
13.10	Perform on-camera.
14.0	Operate television studio audio control systems. The student will be able to:
14.01	Identify and select microphones for production.
14.02	Place microphones for maximum effect.
14.03	Describe parts of sound recording and playback devices.
14.04	Operate sound recording and playback devices.
14.05	Describe parts of an audio mixing console.
14.06	Operate an audio mixing console.
15.0	Perform character generation (CG). The student will be able to:
15.01	Create television graphics using industry standard equipment.
15.02	Understand television graphics safe zone and color design.
15.03	Create CGs adhering to the rule of thirds.
16.0	Operate editing software. The student will be able to:

16.01	Generate graphics using editing software.
16.02	Combine media elements into a final product.
16.03	Select the best source material to achieve program goals.
16.04	Edit a sequence for continuity.
17.0	Utilize the Internet to gather data for a planned production. The student will be able to:
17.01	Use the Internet to research specific information on a production topic as assigned.
17.02	Derive online information for use in graphs and charts in a production.
18.0	Demonstrate industry accepted skills for studio and remote production. The student will be able to:
18.01	Demonstrate skills in selecting production topics.
18.02	Determine quality of production topics.
18.03	Operate television studio equipment.
18.04	Adhere to production deadlines.
19.0	Assemble a lighting set up using modifiers (e.g., flags, reflectors, diffusers or artificial lights). The student will be able to:
19.01	Create shadow to add depth and dimension using appropriate modifiers.
20.0	Demonstrate correct use of equipment used in television production. The student will be able to:
20.01	Properly manage program inventory.
20.02	Demonstrate basic equipment maintenance and management.
21.0	Perform intermediate digital audio and video recording and editing operations. The student will be able to:
21.01	Identify and describe different video recording devices.
21.02	Control audio mix and effects.
21.03	Export a file appropriately for a variety of distribution methods.
21.04	Utilize keyframes in editing.
21.05	Perform time code calculations.

Course Number: RTT0516
Occupational Completion Point: B
Studio Technician – 450 Hours

22.0 Function as a member of a production team. The student will be able to:

22.01 List the job functions of the television production team.

22.02 Operate studio equipment (e.g., CCU, switcher or audio).

22.03 Operate a CCU to correct video signals from studio cameras.

22.04 Execute the four steps of the production process.

22.05 Give and follow directions.

22.06 Set and adhere to production deadlines.

22.07 Receive and respond to client comments and feedback.

23.0 Select special effects lighting for a planned production. The student will be able to:

23.01 Use lighting instruments to create the mood for a production.

23.02 Use appropriate lighting accessories (gels, reflectors, etc.) to enhance a production.

24.0 Create a variety of television programming. The student will be able to:

24.01 Write, produce, direct and edit editorials.

24.02 Write, produce, direct and edit feature programs.

24.03 Write, produce, direct and edit interview programs.

24.04 Write, produce, direct and edit commercials.

25.0 Research and select one or more areas of television production for specialization. The student will be able to:

25.01 Survey and select area(s) for specialization in television production.

25.02 Perform research on position availability, training requirements and post-secondary institutes with programs of study or emphasis in the selected specialization.

26.0 Perform advanced audio and video recording and editing operations in a studio situation. The student will be able to:

26.01 Set up digital audio and/or digital video editing equipment and or software.

26.02	Set up digital audio and/or digital video recording and playback devices.
27.0	Create a television program. The student will be able to:
27.01	Plan a television program.
27.02	Write a television program.
27.03	Direct a television program.
27.04	Edit a television program.
27.05	Record a television program.
28.0	Demonstrate an independent level of proficiency in the selected area of specialization. The student will be able to:
28.01	Demonstrate engagement in all aspects of the production process and assist peers, as needed.
28.02	Identify deficient areas of knowledge/skill level and make plan for improvement.
28.03	Set personal goals for achievement in Television Production.
28.04	Track skill acquisition and progress toward personal goals.
29.0	Demonstrate advanced scriptwriting techniques. The student will be able to:
29.01	Write a broadcast script for a program with a minimum 10-minute program length.
29.02	Use the correct script format for the program selected (documentary, drama, infomercial, etc.).
30.0	Apply production skills by producing a program. The student will be able to:
30.01	Plan a television program with a minimum 10-minute program length.
30.02	Write a television program with a minimum 10-minute program length.
30.03	Direct a television program with a minimum 10-minute program length.
30.04	Record a television program with a minimum 10-minute program length.
30.05	Edit a television program with a minimum 10-minute program length.
30.06	Distribute the television program with the proper settings for the medium.
31.0	Perform advanced digital audio and video recording and editing operations. The student will be able to:

31.01	Organize assets in digital format.
31.02	Set-up video input and output devices.
31.03	Perform insert edits in a non-linear format.

Course Number: RTT0109
Occupational Completion Point: C
Television Production Operations – 300 Hours

32.0	Perform basic maintenance for lighting instruments. The student will be able to:
32.01	Identify the correct bulb for a light fixture.
32.02	Replace a bulb in a fixture.
32.03	Use the appropriate gear and/or techniques to ensure that the bulbs are not exposed to human contact (avoid oils on light surfaces).
33.0	Perform Electronic News Gathering (ENG) and Electronic Field Production (EFP) equipment functions. The student will be able to:
33.01	List and describe ENG and EFP equipment components.
33.02	Set up equipment for field production.
33.03	Operate equipment during field production segments.
34.0	Translate written script into a full television production. The student will be able to:
34.01	Produce a television program from a written script.
35.0	Create and maintain a portfolio with embedded production media. The student will be able to:
35.01	Curate and select work that demonstrates the skills needed in the industry.
35.02	Select a distribution method that allows access to your work.
36.0	Function at an independent level with proficiency in one area of television production. The student will be able to:
36.01	Survey and select an area of specialization in television production.
36.02	Perform at an independent level of proficiency in area of specialization.
36.03	Create useable end products in the area of specialization.

36.04	Create training materials in the area of specialization.
36.05	Demonstrate the correct application and use of the selected area of specialization.
37.0	Research a specific career in television. The student will be able to:
37.01	Perform career research on a specific area of television production.
37.02	Write a report on the specific career; include salary, job prospects, and educational requirements.
37.03	Prepare a résumé for employment in the specific career selected.
37.04	Demonstrate a high level of proficiency in the specific career area selected.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Career and Technical Student Organization (CTSO)

SkillsUSA is the co-curricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Basic Skills

In Career Certificate Programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Computation (Mathematics) and Communications (Reading and Language Arts). These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

Adult students with disabilities, as defined in Section 1004.02, Florida Statutes, may be exempted from meeting the Basic Skills requirements (Rule 6A-10.040). Students served in exceptional student education (except gifted) as defined in s. 1003.01, F.S., may also be exempted from meeting the Basic Skills requirement. Each school district and Florida College System Institution must adopt a policy addressing procedures for exempting eligible students with disabilities from the Basic Skills requirement as permitted in Section 1004.91, F.S.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

Note: postsecondary curriculum and regulated secondary programs cannot be modified.

**Florida Department of Education
Curriculum Framework**

Program Title: Fashion Technology and Production Services
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology and Communication

Career Certificate Program		
Program Number	K500100	
CIP Number	0650040701	
Grade Level	30, 31	
Program Length	2550 hours	
Teacher Certification	Refer to the Program Structure section.	
CTSO	FCCLA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.shtml	
Basic Skills Level	Computation (Mathematics): 10	Communications (Reading and Language Arts): 10

Purpose

The purpose of this program is to prepare students for careers in fashion technology and production services; these careers include occupations in alterations, tailoring, formalwear, costuming, accessories, embroidering and patternmaking.

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology and Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology and Communication career cluster.

The content includes, but is not limited to, industrial sewing, entrepreneurship, alterations, the design and construction of menswear, formalwear, costumes and accessories, embroidering and patternmaking.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of five occupational completion points (OCP). OCP A is comprised of three core courses. Students are considered program completers after finishing OCP A **and** one additional OCP of their choosing.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section 1007.24 (1), F.S. Career and Technical credit shall be awarded to the student on a transcript in accordance with Section 1001.44(3)(b), F.S.

To teach the courses listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	CTE0000	Garment Fabrication Specialist	APPRL MFG @7 7G FAM CON SC 1 TAILORING 7 G TEC ED 1@2 ENG&TEC ED1@2	150 hours
	CTE0001	Industrial Seamstress		150 hours
	CTE0002	Introduction to Patternmaking and Entrepreneurship		150 hours
B	CTE0003	Alterations Specialist		300 hours
	CTE0004	AND Tailor for Menswear		300 hours
	CTE0005	OR Formalwear Specialist		300 hours
C	CTE0006	Costume Specialist		300 hours
	CTE0007	OR Accessories Specialist		300 hours
	CTE0008	OR Intimate Apparel Specialist		300 hours
D	CTE0010	Embroiderer		300 hours
	CTE0011	Embroidery Digitizer		300 hours
E	CTE0012	CAD Patternmaker I		300 hours
	CTE0013	CAD Patternmaker II		300 hours

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Select, use and care for tools, equipment and supplies safely.
- 02.0 Identify fiber and textile characteristics.
- 03.0 Set up, operate and maintain a conventional sewing machine.
- 04.0 Set up, operate and maintain a conventional serger.
- 05.0 Take measurements and select patterns based on body type.
- 06.0 Demonstrate simple construction techniques.
- 07.0 Set up, safely operate, maintain and adjust industrial sewing machines.
- 08.0 Create a quality work sample from each industrial machine.
- 09.0 Demonstrate garment construction skills on an industrial machine.
- 10.0 Demonstrate an understanding of the terminology used in the apparel industry.
- 11.0 Identify employment opportunities.
- 12.0 Schedule and participate in industry job shadowing that relates to available specialties (Optional).
- 13.0 Identify and exhibit employment skills for occupations related to Fashion Technology and Production Services.
- 14.0 Research the effects of culture on the clothing industry.
- 15.0 Finalize a portfolio per industry standards.
- 16.0 Navigate computer-aided pattern design software.
- 17.0 Demonstrate basic patternmaking skills.
- 18.0 Manipulate darts.
- 19.0 Understand the differences between childrenswear and adult clothing.
- 20.0 Demonstrate knowledge of technology in the apparel and textile industries.
- 21.0 Describe and explain the elements and principles of design related to Fashion Technology and Production Services.
- 22.0 Demonstrate leadership and organizational skills.
- 23.0 Demonstrate an understanding of entrepreneurship.
- 24.0 Identify and develop a business plan (Optional).
- 25.0 Use terminology related to alterations and fittings.
- 26.0 Fit a custom garment accurately.
- 27.0 Alter a sample or garment.
- 28.0 Repair a clothing garment or sample.
- 29.0 Exhibit positive customer service skills.
- 30.0 Alter fine/tailored clothing samples or garments.
- 31.0 Demonstrate clothing repair for fine/tailored clothing.
- 32.0 Create and manage an alterations business (Optional).
- 33.0 Demonstrate an understanding of the proper fit of menswear.
- 34.0 Construct garments and accessories for men's apparel.
- 35.0 Embroider a monogram on men's clothing.
- 36.0 Construct a speed tailored jacket.

- 37.0 Construct a tailored jacket.
- 38.0 Identify and define terminology related to bridal gowns and formalwear.
- 39.0 Demonstrate management and customer service skills related to formalwear.
- 40.0 Construct formal dresses.
- 41.0 Construct bridal headpieces and accessories.
- 42.0 Construct a bridal gown.
- 43.0 Construct simple stretch garments.
- 44.0 Construct advanced stretch garments.
- 45.0 Demonstrate costume construction skills.
- 46.0 Construct costumes of various types.
- 47.0 Navigate workspace of embroidery software.
- 48.0 Digitize various types of text using embroidery software.
- 49.0 Digitize basic appliqués and patches.
- 50.0 Embroider patches.
- 51.0 Construct simple headwear.
- 52.0 Construct simple accessories bags.
- 53.0 Construct complex accessories.
- 54.0 Construct various hats.
- 55.0 Construct costume accessories.
- 56.0 Construct specialty accessories.
- 57.0 Identify and define terminology related to intimate apparel and shapewear.
- 58.0 Construct basic lingerie garments for women.
- 59.0 Embroider a monogram on lingerie.
- 60.0 Construct basic undergarments for men.
- 61.0 Construct various bras.
- 62.0 Construct various fitted undergarments with stretch.
- 63.0 Construct a functioning corset.
- 64.0 Select, use and care for embroidery tools, equipment and supplies safely.
- 65.0 Set up, operate and maintain a conventional embroidery machine.
- 66.0 Demonstrate simple embroidery techniques.
- 67.0 Set up, operate and maintain a multi-needle embroidery machine.
- 68.0 Demonstrate advanced embroidery techniques.
- 69.0 Navigate workspace of embroidery software.
- 70.0 Using embroidery software to digitize various types of text.
- 71.0 Use embroidery software to edit designs.
- 72.0 Use illustration software for embroidery projects.
- 73.0 Embroider a design from a digitized file.
- 74.0 Manipulate basic embroidery stitches.
- 75.0 Edit vector graphics and other images or artwork and convert them into stitches.
- 76.0 Split designs into multiple hoops.

- 77.0 Draft foundation patterns, advanced darts, yokes, flanges, tucks, collars and cowls using the flat-pattern method of drafting and computer-aided design (CAD) software.
- 78.0 Draft sleeves, cuffs, contours and skirts using the flat-pattern method of drafting and computer-aided drafting (CAD) software.
- 79.0 Draft various articles of clothing using the flat-pattern method of drafting and computer-aided drafting (CAD) software.
- 80.0 Use illustration software for patternmaking.
- 81.0 Draft various stretch garments using the flat-pattern method of drafting and computer-aided drafting (CAD) software.

**Florida Department of Education
Student Performance Standards**

Program Title: Fashion Technology and Production Services
Career Certificate Program Number: K500100

Course Number: CTE0000
Occupational Completion Point: A
Garment Fabrication Specialist – 150 Hours

01.0	Select, use and care for tools, equipment and supplies safely. The student will be able to:
01.01	Select and use shears.
01.02	Use rotary cutters and other cutting equipment.
01.03	Use machine maintenance equipment.
01.04	Use measuring tools.
01.05	Use pressing equipment.
01.06	Apply workroom safety procedures when using conventional sewing machines, home serger machines, pressing equipment and small hand tools.
02.0	Identify fiber and textile characteristics. The student will be able to:
02.01	Research the history of textile origins.
02.02	Identify and describe fiber characteristics.
02.03	Identify and describe types of fabric construction.
02.04	Identify and describe types of fabric finishes.
02.05	Identify and describe types of textiles.
02.06	Identify laws and regulations governing the textile industry, including labeling laws.
03.0	Set up, operate and maintain a conventional sewing machine. The student will be able to:
03.01	Identify the parts of a sewing machine.
03.02	Select and insert sewing machine needles based on fabric type.

03.03	Identify the steps and demonstrate threading the sewing machine.
03.04	Demonstrate bobbin winding, threading the bobbin case and inserting the bobbin correctly into the sewing machine.
03.05	Demonstrate straight stitching.
03.06	Demonstrate stitch length and width selection.
03.07	Identify and demonstrate utility stitches.
03.08	Identify and demonstrate decorative stitches.
03.09	Identify the tension and demonstrate tension adjustment.
03.10	Replace light bulb.
04.0	Set up, operate and maintain a conventional serger. The student will be able to:
04.01	Compare and contrast various serger machines and their characteristics.
04.02	Thread the serger following manufacturer's directions.
04.03	Set tension following the manufacturer's directions.
04.04	Clean and maintain the serger following manufacturer's instructions.
04.05	Demonstrate a rolled hem following sample directions.
04.06	Replace knives, needles and light bulbs following manufacturer's directions.
05.0	Take measurements and select patterns based on body type. The student will be able to:
05.01	Take body measurements using the correct method.
05.02	Perform mathematical computations related to the apparel and textile industry.
05.03	Select pattern size and determine figure type.
05.04	Identify and describe styles that suit various body types.
05.05	Select a pattern and fabric for body type.
05.06	Identify and describe characteristics of a properly fitted garment.
06.0	Demonstrate simple construction techniques. The student will be able to:

06.01	Demonstrate basic hand stitching skills.
06.02	Interpret verbal, written and visual directions.
06.03	Select appropriate fabric for a pattern.
06.04	Prepare fabric.
06.05	Adjust patterns following pattern directions.
06.06	Lay out, pin, cut and mark fabric according to pattern directions.
06.07	Stitch darts and pintucks.
06.08	Identify and match garment pieces using markings and stitch following directions.
06.09	Demonstrate correct pressing techniques following fabric requirements.
06.10	Sew a casing.
06.11	Demonstrate ease stitching.
06.12	Demonstrate machine hemming following machine manual instructions.
06.13	Apply fusible interfacing according to manufacturer's instructions.
06.14	Apply shaped facings.
06.15	Apply zippers using different methods and following manufacturer's directions.
06.16	Apply waistbands following prescribed directions.
06.17	Construct belt loops according to instructions.
06.18	Construct various types of pockets.
06.19	Construct mitered corners according to instructions.
06.20	Construct set-in/fitted sleeves according to instructions.
06.21	Construct various seam finishes.
06.22	Match plaids and stripes.

Course Number: CTE0001
Occupational Completion Point: A
Industrial Seamstress -- 150 Hours

07.0	Set up, safely operate, maintain and adjust industrial sewing machines. The student will be able to:
07.01	Thread, maintain and operate a single needle straight stitch machine.
07.02	Thread, maintain and operate a serger.
07.03	Thread, maintain and operate a cover stitch.
07.04	Thread, maintain and operate a button sewer.
07.05	Thread, maintain and operate a buttonholer.
07.06	Thread, maintain and operate a walking foot.
07.07	Thread, maintain and operate a Merrow machine.
07.08	Thread, maintain and operate an electronic programmable machine.
07.09	Thread, maintain and operate a blind hem.
08.0	Create a quality work sample from each industrial machine. The student will be able to:
08.01	Demonstrate ability to use each industrial machine appropriately on a garment.
08.02	Demonstrate ability to use each industrial machine by creating a sample from each machine and adding it to portfolio.
09.0	Demonstrate garment construction skills on an industrial machine. The student will be able to:
09.01	Construct cuffs and plackets on sleeves.
09.02	Create and attach a collar according to a pattern or teacher instructions.
09.03	Machine sew buttonholes according to manufacturer's instructions.
09.04	Apply complex zippers using different methods, following manufacturer's directions.
09.05	Assemble a portfolio and include samples created through coursework.
10.0	Demonstrate an understanding of the terminology used in the apparel industry. The student will be able to:
10.01	Use terminology associated with the apparel and textile merchandising and manufacturing industry.

10.02	Define and differentiate market segmentation.
10.03	Develop market research strategies based on demographics, focus groups, etc.
10.04	Demonstrate techniques for inventory management.
10.05	Recognize e-commerce merchandising techniques.
11.0	Identify employment opportunities. The student will be able to:
11.01	Identify occupations in the garment/textile industry and the duties and responsibilities of those occupations.
11.02	Identify levels of training required, opportunities for job advancement and earning/wage levels for garment/textile production occupations.
11.03	Visit various facilities related to the industry following recommendations of the instructor.
11.04	Create a presentation on traditional and non-traditional career paths (e.g., costume design, theater, entertainment, buyers, and fabric store owners) in the garment/textile industry.
12.0	Schedule and participate in industry job shadowing that relates to available specialties (Optional). The student will be able to:
12.01	Research people within the local area working in one of the specialties offered in the program.
12.02	Write about a job shadowing experience and apply knowledge gained within the program.
13.0	Identify and exhibit employment skills for occupations related to Fashion Technology and Production Services. The student will be able to:
13.01	Identify and list documents that may be required when applying for a job.
13.02	Complete a job application form.
13.03	Demonstrate competence in job interview techniques.
13.04	Identify and demonstrate appropriate responses to criticism from an employer, supervisor, or co-worker.
13.05	Identify and demonstrate acceptable work habits.
13.06	Demonstrate knowledge of how to make job changes appropriately.
13.07	Demonstrate customer service and selling techniques.
14.0	Research the effects of culture on the clothing industry. The student will be able to:
14.01	Identify design periods from 1900 to the present day.

14.02	Explain the influence of earlier design periods on present day design and construction.
14.03	Describe the elements and principles of design as they relate to a particular time period/culture.
14.04	Create a multimedia presentation detailing a selected design period.
15.0	Finalize a portfolio per industry standards. The student will be able to:
15.01	Submit and present a portfolio; include all work from the program and an industry appropriate résumé.

Course Number: CTE0002 Occupational Completion Point: A Introduction to Patternmaker and Entrepreneurship – 150 Hours	
16.0	Navigate computer-aided pattern design software. The student will be able to:
16.01	Navigate menus (e.g., file, edit, view).
16.02	Create objects.
16.03	Select objects.
16.04	Move objects.
16.05	Edit objects (align, copy flip, intersect, locate points, mirror, move points, symbols, rotate, scale).
16.06	Measure objects.
17.0	Demonstrate basic patternmaking skills. The student will be able to:
17.01	Explain the functions of patternmaking tools.
17.02	Perform mathematical operations related to patternmaking.
17.03	Describe the process of patternmaking using relevant terminology.
17.04	Demonstrate proper use of a grainline.
17.05	Define draping and demonstrate the basics of the draping method of dress design.
17.06	Draft the basic pattern foundation; include the bodice, skirt and sleeve using flat-patternmaking.
17.07	Add appropriate seam allowance to a drafted pattern.

17.08	Construct a basic muslin shell using customer's measurements and/or a pattern.
17.09	Transfer fitting changes to paper patterns following directions.
17.10	Analyze and adjust patterns for various figure types.
17.11	Identify, manipulate and combine various techniques to develop design details.
18.0	Manipulate darts. The student will be able to:
18.01	Define and explain dart manipulation; add fullness and contouring.
18.02	Define and demonstrate slash-spread and overlap patternmaking techniques.
18.03	Define and demonstrate pivotal-transfer patternmaking techniques.
18.04	Demonstrate single-dart and two-dart manipulation.
18.05	Determine various types of princess seams on a sloper/foundation garment.
19.0	Understand the differences between children's wear and adult clothing. The student will be able to:
19.01	Explain the challenges in creating children's wear.
19.02	Explain size categories and sizing methods for children's wear
19.03	Explain differences in measuring children and adults.
19.04	Draft a basic pattern set for girls and boys.
19.05	Compare and contrast menswear and womenswear.
19.06	Compare and contrast mature male and youth male figures.
19.07	Demonstrate appropriate measuring of the male figure.
20.0	Demonstrate knowledge of technology in the apparel and textile industries. The student will be able to:
20.01	Use computer terminology related to the apparel and textile industries.
20.02	Demonstrate an awareness of computer-aided design technology.
20.03	Identify industry-related tools relative to CAD.
20.04	Create, edit and measure objects in industry CAD software.

20.05	List and describe software available in the apparel and textile industries.
20.06	Explain how current technologies are used in the creation of fashion products (e.g., fashion profiles, fabrics, garments).
20.07	Identify the development of tools, equipment and technology used in design services as they relate to particular historical periods.
21.0	Describe and explain the elements and principles of design related to Fashion Technology and Production Services. The student will be able to:
21.01	Define the elements of design that are applicable to fashion (space, line, shape, form, texture, color).
21.02	Demonstrate understanding of the color wheel.
21.03	Recognize basic color schemes.
21.04	Understand the psychology of color.
21.05	Define the principles of design that are applicable to fashion and/or interior design (proportion, scale, balance, emphasis, rhythm, harmony).
21.06	Explain the impact of human factors (psychological, physiological and social needs) on decisions relating to the design services process.
21.07	Identify and describe various garment styles, features and parts as they relate to the elements and principles of design.
22.0	Demonstrate leadership and organizational skills. The student will be able to:
22.01	Identify professional and youth organizations related to the fashion technology and production services industry.
22.02	Identify purposes and functions of professional and youth organizations.
22.03	Identify roles and responsibilities of members within organizations.
22.04	Demonstrate cooperation as a group member in achieving organizational goals.
22.05	Demonstrate confidence in leadership roles and organizational responsibilities.
23.0	Demonstrate an understanding of entrepreneurship. The student will be able to:
23.01	Define entrepreneurship.
23.02	Identify and describe the necessary personal characteristics and responsibilities of a successful entrepreneur.
23.03	Analyze the advantages and disadvantages of business ownership and describe entrepreneurship opportunities as a career planning option.
23.04	Explain the concept of, and applications for, social entrepreneurship.

23.05	Understand the key elements of a business plan.
23.06	Assess the start-up requirements associated with a new venture.
23.07	Assess risks associated with a new venture.
23.08	Identify external resources useful to entrepreneurs in the sewn products industry during concept development.
23.09	Research and identify legal issues affecting small businesses; include contracts, negotiable instruments and privacy issues.
23.10	Describe strategies to protect intellectual property.
23.11	Identify various forms of business ownership.
23.12	Identify IRS business reporting requirements.
23.13	Identify and plan strategies to implement federal and state workplace regulations to include OSHA and ADA.
24.0	Identify and develop business a plan (Optional). The student will be able to:
24.01	Evaluate a project's strengths, weaknesses, opportunities and threats (SWOT).
24.02	Conduct a competitive analysis.
24.03	Evaluate business acquisition options.
24.04	Develop company goals and objectives.
24.05	Develop a business mission.
24.06	Forecast income and sales.
24.07	Conduct a break-even analysis.
24.08	Develop action and business plans.

Course Number: CTE0003
Occupational Completion Point: B
Alterations Specialist -- 300 Hours

25.0	Use terminology related to alterations and fittings. The student will be able to:
25.01	Define terminology related to alterations.

26.0	Fit a custom garment accurately. The student will be able to:
26.01	Pin-fit garments to a customer.
26.02	Chalk and baste a garment to fit a customer.
26.03	Demonstrate appropriate fitting techniques when dealing with customers.
26.04	Define standards of fit and ease.
26.05	Analyze wrinkles to adjust for proper fit.
27.0	Alter a sample or garment. The student will be able to:
27.01	Remove stitches in ready-made garments without damaging fabric.
27.02	Construct and finish seams.
27.03	Mark and even a hemline following guidelines.
27.04	Adjust hemlines in various garments according to customer's measurements.
27.05	Remove the flare from pant legs following a given set of directions.
27.06	Taper a skirt following a given set of directions.
27.07	Convert tucks to gathers following a given set of instructions.
27.08	Add gathers following a given set of instructions.
27.09	Take in the side seams on a garment/sample.
27.10	Shorten or lengthen sleeves using various techniques.
27.11	Press altered areas using acquired pressing techniques.
28.0	Repair a clothing garment or sample. The student will be able to:
28.01	Reinforce seams and buttonholes on a garment/sample.
28.02	Replace zippers in various types of garments/samples.
28.03	Apply patches to a garment/sample.
28.04	Replace various types of buttons on a garment/sample.

28.05	Demonstrate appropriate pressing techniques on repaired garments/samples.
29.0	Exhibit positive customer service skills. The student will be able to:
29.01	Demonstrate effective communication skills.
29.02	Demonstrate ability to use technology in the workplace.
29.03	Prepare alteration tickets accurately.
30.0	Alter fine/tailored clothing samples or garments. The student will be able to:
30.01	Add or remove shoulder pads following specific instructions.
30.02	Adjust crotch in a garment/sample according to customer's body measurements.
30.03	Adjust waist size of various garments according to customer's body measurements.
30.04	Correct various garments for high hip or swayback using proper adjustment techniques.
30.05	Adjust, remove, or add cuffs to pants adjusting to client's height difference and customer specifications.
30.06	Adjust bodices according to customer's measurements using proper adjustment techniques.
30.07	Redistribute ease in sleeve cap adjusting fullness according to specified instructions.
30.08	Adjust sleeve cuffs according to specified instructions.
30.09	Shorten wristlets on knitted sleeves according to customer's or manufacturer's specifications.
30.10	Reshape trouser legs using proper adjustment techniques.
30.11	Taper men's shirts using proper adjustment techniques.
30.12	Miter hem corners using proper construction techniques.
30.13	Add or remove tucks, pleats, or darts using proper construction techniques.
30.14	Increase and decrease the width of pleats following proper construction techniques.
30.15	Alter closures and fasteners according to customer's specifications.
30.16	Alter belt loops according to the customer's specifications.
30.17	Adjust belts to fit the customer's form.

30.18	Adjust pockets according to fabric requirements and using proper alteration techniques.
30.19	Shorten sleeves on a tailored jacket.
30.20	Narrow lapels on a tailored jacket.
30.21	Lower the collar on a suit jacket.
30.22	Construct a gusset in trousers.
30.23	Construct a gusset in a dance garment.
31.0	Demonstrate clothing repair for fine/tailored clothing. The student will be able to:
31.01	Apply patches to holes or rips in knit or woven fabrics following specified fabric instructions.
31.02	Repair frayed parts of garments (e.g., cuffs, collars, seams) following proper repair techniques for the specified fabric.
32.0	Create and manage an alterations business (optional). The student will be able to:
32.01	Identify the occupations necessary to run an alterations business.
32.02	Develop a plan for the alterations business; include job assignments and responsibilities, hours of operation, marketing, fees charged, etc.

Course Number: CTE0004
Occupational Completion Point: B
Tailor for Menswear -- 300 Hours

Note: Students may choose one of the following courses for the completion of OCP B: 'Tailor for Menswear' or 'Formalwear Specialist'.

33.0	Demonstrate an understanding of the proper fit of menswear. The student will be able to:
33.01	Identify terminology related to menswear.
33.02	Identify standards of fit related to menswear.
33.03	Demonstrate proficiency in identifying male figure types.
33.04	Identify necessary corrections for proper fit particular to men.
34.0	Construct garments and accessories for men's apparel. The student will be able to:
34.01	Construct an ascot.

34.02	Construct a tie and bowtie.
34.03	Construct a cummerbund.
34.04	Construct a vest.
34.05	Construct a tuxedo shirt.
34.06	Construct slacks.
34.07	Construct cargo pants.
35.0	Embroider a monogram on men's clothing. The student will be able to:
35.01	Select appropriate interfacing and stabilizer for embroidery.
35.02	Utilize embroidery software to generate a custom monogram.
35.03	Hoop, position and mark fabric for accurate embroidery.
35.04	Monogram a necktie.
35.05	Construct and monogram a pocket square.
35.06	Monogram a shirt cuff.
36.0	Construct a speed tailored jacket. The student will be able to:
36.01	Construct a speed tailored jacket using a specific set of construction skills according to given directions.
37.0	Construct a tailored jacket. The student will be able to:
37.01	Select suitable fabric for a tailored jacket using identified criteria.
37.02	Select suitable hair canvas, interfacing, lining and underlining for specified fabric.
37.03	Prepare fabrics and alter patterns using pattern directions.
37.04	Lay out patterns, bias, plaid, or one-way prints using correct layout procedures.
37.05	Cut patterns, fabric, hair canvas and linings according to given directions.
37.06	Tailor tack markings using the proper techniques.
37.07	Identify tailor basting and tailor baste layers.

37.08	Tape roll line and edges following prescribed method.
37.09	Pad-stitch lapels and collars following prescribed method.
37.10	Baste and fit a garment according to customer specifications.
37.11	Stitch seams using correct stitches for fabric.
37.12	Apply seam finishes chosen from practice samples.
37.13	Construct tailored pockets following given directions.
37.14	Construct bound buttonholes following given directions.
37.15	Construct chest pieces, shoulder pads and sleeve heads following given directions.
37.16	Set in sleeves following given directions.
37.17	Construct and apply upper collar and facings following given directions.
37.18	Catch-stitch all edges using proper method of stitching.
37.19	Fit a garment using the customer's measurements.
37.20	Construct and apply linings according to fabric requirements.
37.21	Construct hems using the proper technique for fabric/garment style.
37.22	Identify steps of and demonstrate tailor pressing.

Course Number: CTE0005
Occupational Completion Point: B
Formalwear Specialist -- 300 Hours

Note: Students may choose one of the following courses for the completion of OCP B: 'Tailor for Menswear' or 'Formalwear Specialist'.

38.0	Identify and define terminology related to bridal gowns and formalwear. The student will be able to:
38.01	Identify and define bridal silhouettes.
38.02	Identify appropriate styles for body types.
38.03	Identify types of fabrics and laces used in bridal fashions.

38.04	Define terminology related to bridal and formalwear.
39.0	Demonstrate management and customer service skills related to formalwear. The student will be able to:
39.01	Develop a schedule for production and fittings.
39.02	Develop standards of operations, pricing and alteration policies for custom formalwear.
39.03	Demonstrate customer service skills related to brides and bridal parties.
40.0	Construct formal dresses. The student will be able to:
40.01	Construct a bridesmaid dress or evening gown using a specific set of construction skills according to given directions.
40.02	Construct a flower girl dress using a specific set of construction skills according to given directions.
40.03	Construct a mother of the bride dress using a specific set of construction skills according to given directions.
41.0	Construct bridal headpieces and accessories. The student will be able to:
41.01	Construct bridal headpieces.
41.02	Construct bridal accessories.
42.0	Construct a bridal gown. The student will be able to:
42.01	Construct a bridal gown; include the following skills: • insert boning • insert cups • construct a petticoat/underskirt • apply beading, pearls and rhinestones • construct a bustle

Course Number: CTE0006
Occupational Completion Point: C
Costume Specialist -- 300 Hours

Note: Students may choose one of the following courses for the completion of OCP C: 'Costume Specialist', 'Accessories Specialist' or 'Intimate Apparel Specialist'.

43.0	Construct simple stretch garments. The student will be able to:
43.01	Stitch stretch fabric with a 4-thread serge, zigzag and cover stitches.

43.02	Construct a basic T-shirt.
43.03	Construct a basic tank top.
43.04	Construct a gathered dance skirt.
43.05	Construct a basic leotard with a shelf bra.
43.06	Construct a full face, full body unitard.
43.07	Construct a garment using athletic mesh.
43.08	Construct stirrup pants.
43.09	Construct stretch briefs.
44.0	Construct advanced stretch garments. The student will be able to:
44.01	Construct a stretch garment with bra attachments.
44.02	Construct a fully lined leotard.
44.03	Construct a leotard with mesh sleeves.
44.04	Construct a turtleneck collar.
44.05	Construct fingerless gloves.
44.06	Insert various zippers into stretch fabric.
44.07	Demonstrate application of a stretch appliqué.
45.0	Demonstrate costume construction skills. The student will be able to:
45.01	Construct costumes with the following: • Velcro/hook and loop • Foam pods • Fur • Vinyl • Feathers • Stones • Beads • Sequins

	• Sweat wicking fabric • Silk • Chiffon • Tulle • Organza • Hooded cape • Lights, fiber optics, or other wired and battery operated devices
46.0	Construct costumes of various types. The student will be able to:
46.01	Create the following costume types: • One-piece fur costume • Suit with shirt insert • Sweat wicking shirt with tuxedo front • Dance dress or skirt with gusset inserts • Ruffled wrap jacket • Dance pants with V-front • Dance pants with bell bottoms or flared legs.
47.0	Navigate workspace of embroidery software. The student will be able to:
47.01	Change thread colors.
47.02	Use a sewing simulator.
47.03	Open, close and save designs.
47.04	Print embroidery designs.
47.05	View and measure designs.
47.06	Display a hoop.
47.07	Merge designs.
48.0	Digitize various types of text using embroidery software. The student will be able to:
48.01	Create straight horizontal text.
48.02	Create vertical text.

48.03	Create circular text.
48.04	Create text along a path.
48.05	Utilize text enveloping.
48.06	Import and convert TrueType fonts.
49.0	Digitize basic appliqués and patches. The student will be able to:
49.01	Choose an outline shape from artwork.
49.02	Create a basting or placement stitch.
49.03	Create a satin stitch or decorative edge-finishing stitch.
50.0	Embroider patches. The student will be able to:
50.01	Select appropriate interfacing and stabilizer for embroidery.
50.02	Hoop, position and mark fabric for accurate embroidery.
50.03	Cut and trim fabric for patches and appliqués.
50.04	Embroider a basic patch.

Course Number: CTE0007
Occupational Completion Point: C
Accessories Specialist -- 300 Hours

Note: Students may choose one of the following courses for the completion of OCP C: 'Costume Specialist', 'Accessories Specialist' or 'Intimate Apparel Specialist'.

51.0	Construct simple headwear. The student will be able to:
51.01	Construct a bucket hat.
51.02	Construct fascinators.
51.03	Construct hair bows.
51.04	Construct hair flowers.
52.0	Construct simple accessories bags. The student will be able to:

52.01	Construct a garment bag.
52.02	Construct a zippered handbag.
52.03	Construct a handbag with snaps.
52.04	Construct a handbag with straps.
52.05	Construct a backpack.
52.06	Construct coverings for electronic devices (e.g., tablets, phones, laptops).
Note: Students may choose between a focus in Complex Accessories or Accessories for Costumes. The following standards are for the Complex Accessories focus:	
53.0	Construct complex accessories. The student will be able to:
53.01	Construct an organizer.
53.02	Construct a fully lined purse with welt zippered pockets.
53.03	Construct a wallet.
53.04	Construct a belt.
53.05	Construct a fedora.
53.06	Use the following fabrics: • Vinyl • Leather • Suede • Burlap • Buckram
54.0	Construct various hats. The student will be able to:
54.01	Construct three headpieces using a specific set of construction skills according to given directions.
Note: Students may choose between a focus in Complex Accessories or Accessories for Costumes. The following standards are for the Accessories for Costumes focus:	
55.0	Construct costume accessories. The student will be able to:
55.01	Construct spats.

55.02	Construct spandex gloves.
55.03	Construct costume character gloves.
55.04	Construct a gun holster.
55.05	Construct cuffs.
55.06	Construct and apply patches.
55.07	Construct microphone packs.
55.08	Construct a variety of head coverings.
55.09	Construct a variety of belts.
55.10	Construct foam pods.
56.0	Construct specialty accessories. The student will be able to:
56.01	Construct three specialty accessories using a specific set of construction skills according to given directions.

Course Number: CTE0008
Occupational Completion Point: C
Intimate Apparel Specialist -- 300 Hours

Note: Students may choose one of the following courses for the completion of OCP C: 'Costume Specialist', 'Accessories Specialist' or 'Intimate Apparel Specialist'.

57.0	Identify and define terminology related to intimate apparel and shapewear. The student will be able to:
57.01	Identify and define types and functions of intimate apparel and shapewear.
57.02	Identify appropriate styles for body types.
57.03	Identify types of fabrics and laces used in intimate apparel.
57.04	Define terminology related to intimate apparel and shapewear.
58.0	Construct basic lingerie garments for women. The student will be able to:
58.01	Construct a half-slip.
58.02	Construct a full slip or baby doll.

58.03	Construct various women's underwear.
58.04	Construct a camisole.
58.05	Construct a pair of garters and a garter belt.
58.06	Construct a full-length nightgown with lace trim, beading and stoning.
58.07	Construct a full-length robe including feather trim.
58.08	Construct a netted slip.
59.0	Embroider a monogram on lingerie. The student will be able to:
59.01	Select appropriate interfacing and stabilizer for embroidery.
59.02	Utilize embroidery software to generate a custom monogram.
59.03	Hoop, position and mark fabric for accurate embroidery.
59.04	Monogram a basic piece of women's lingerie.
60.0	Construct basic undergarments for men. The student will be able to:
60.01	Construct boxer shorts.
60.02	Construct boxer briefs.
61.0	Construct various bras. The student will be able to:
61.01	Construct a sports bra.
61.02	Construct a bra with removable cups.
61.03	Construct a bra with underwire and shaped cups.
61.04	Construct a strapless or convertible strap bra.
62.0	Construct various fitted undergarments with stretch. The student will be able to:
62.01	Construct shaping shorts.
62.02	Construct a body suit.
63.0	Construct a functioning corset. The student will be able to:

63.01 Construct a corset; include boning, hooks and eyes, and other specifications.

Course Number: CTE0010 Occupational Completion Point: D Embroiderer – 300 Hours

64.0 Select, use and care for embroidery tools, equipment and supplies safely. The student will be able to:

64.01 Select and use stabilizers, adhesives and fusible sprays, marking tools, various threads and fabrics, positioning aids, hooping aides, scissors, spool aids and various embroidery frames.

64.02 Define terminology related to embroidery.

65.0 Set up, operate and maintain a conventional embroidery machine. The student will be able to:

65.01 Identify types of conventional embroidery machines.

65.02 Identify parts and functions of conventional embroidery machines.

65.03 Identify media and formats of embroidery designs.

65.04 Identify and demonstrate the selection and use of embroidery needles.

65.05 Identify and navigate a conventional embroidery screen/display.

65.06 Identify sizes and types of embroidery fields.

65.07 Change, manipulate and convert thread colors.

65.08 Combine embroidery patterns.

65.09 Edit embroidery designs.

65.10 Attach the hoop.

65.11 Demonstrate proper stabilizing and hooping.

65.12 Save embroidery patterns.

65.13 Set tension following the manufacturer's directions.

65.14 Troubleshoot minor embroidery problems.

66.0 Demonstrate simple embroidery techniques. The student will be able to:

66.01	Demonstrate proper pressing of designs.
66.02	Demonstrate proper placement of designs.
66.03	Demonstrate care for embroidery designs.
66.04	Sew embroidery designs on various fabrics: • Cotton, broadcloth, or duck cloth • Knits (t-shirts) • Densely woven fabrics • Loosely woven fabrics
66.05	Embroider an applique.
66.06	Embroider a patch.
66.07	Use machine alphabet patterns.
66.08	Embroider various monograms.
67.0	Set up, operate and maintain a multi-needle embroidery machine. The student will be able to:
67.01	Identify types of multi-needle embroidery machines.
67.02	Identify types of parts and functions of multi-needle embroidery machines.
67.03	Demonstrate tension setting for a multi-needle embroidery machine following the manufacturer's directions.
67.04	Identify and demonstrate the selection and use of accessories for multi-needle embroidery machines.
67.05	Demonstrate linking a multi-needle embroidery machine to a computer.
67.06	Demonstrate troubleshooting embroidery problems.
68.0	Demonstrate advanced embroidery techniques. The student will be able to:
68.01	Quilt embroidery patterns.
68.02	Demonstrate cutwork.
68.03	Demonstrate lacework.
68.04	Embroider a dimensional project.
68.05	Demonstrate continuous embroidery.

68.06	Embroider a multi-hoop project.
68.07	Demonstrate linking characters.
68.08	Demonstrate embroidery on curved surfaces (e.g., sleeves, caps, cozies, socks)
68.09	Demonstrate sewing embroidery designs on a variety of surfaces (e.g., spandex, leather or vinyl, sheer fabrics, napped fabrics, high-pile fabrics).

Course Number: CTE0011
Occupational Completion Point: D
Embroidery Digitizer – 300 Hours

69.0	Navigate workspace of embroidery software. The student will be able to:
69.01	Change thread colors.
69.02	Use a sewing simulator.
69.03	Open, close and save designs.
69.04	Print embroidery designs.
69.05	View and measure designs.
69.06	Display a hoop.
69.07	Merge designs.
70.0	Use embroidery software to digitize various types of text. The student will be able to:
70.01	Create straight horizontal text.
70.02	Create vertical text.
70.03	Create circular text.
70.04	Create various monograms.
70.05	Create text along a path.
70.06	Utilize text enveloping.
70.07	Import and convert TrueType fonts.

71.0	Use embroidery software to edit designs. The student will be able to:
71.01	Split, move, insert or delete stitches.
71.02	Split designs.
71.03	Adjust stitches based on fabric choice.
71.04	Resize designs and adjust fill stitches accordingly.
71.05	Review density on a map.
71.06	Find and remove hidden stitches in overlapped designs.
71.07	Adjust density to project specifics.
72.0	Use illustration software for embroidery projects. The student will be able to:
72.01	Evaluate industry standard illustration software packages.
72.02	Identify characteristics of vector and bitmap images.
72.03	Demonstrate understanding of the software workspace (menus/palettes).
72.04	Demonstrate software navigation (views, tabs, zoom).
72.05	Demonstrate use of drawing tools to create, combine and edit basic shapes.
72.06	Demonstrate ability to transform content (scale, rotation, position).
72.07	Demonstrate use of pen and pencil tools to draw/edit straight and curved paths.
72.08	Demonstrate use of color and painting tools (patterns, gradients, color palettes).
72.09	Demonstrate ability to work with type (formatting, font palette, paths).
72.10	Demonstrate use of layers (creating, locking, viewing, pasting, merging).
72.11	Demonstrate use of blending (gradients, objects).
72.12	Demonstrate use of brushes.
72.13	Explore file exporting options and round trip workflows with page layout software.
72.14	Demonstrate knowledge of bleed for vector and bitmap design software.

72.15	Demonstrate knowledge of bleed for vector and image editing/authoring software.
73.0	Embroider a design from a digitized file. The student will be able to:
73.01	Embroider a design that uses text, multiple merged designs and resized designs.
74.0	Manipulate basic embroidery stitches. The student will be able to:
74.01	Delete, move and edit stitches.
74.02	Convert and edit segments of stitch types.
74.03	Demonstrate use of common embroidery stitch effects.
74.04	Blend thread colors in a segment.
74.05	Digitize a design using run stitches and satin stitches.
74.06	Group and ungroup stitches.
74.07	Change stitch properties.
74.08	Change fill properties and stitches.
74.09	Change underlay properties.
74.10	Apply specialty fills to outline shapes.
74.11	Fit designs on custom paths including circular and carousel patterns.
74.12	Emboss shapes into a fill.
74.13	Adjust pull compensation.
74.14	Digitize using auto stipple stitches.
74.15	Create ripple effect around designs for continuous quilting motifs.
74.16	Rearrange multiple designs for random scatter effect.
74.17	Add basting stitches to design.
74.18	Add button holes to a design.
75.0	Edit vector graphics and other images or artwork and convert them into stitches. The student will be able to:

75.01	Draw lines, shapes and artwork/vector images.
75.02	Convert vector images to embroidery.
75.03	Import, manipulate and export images.
75.04	Identify characteristics of vector and bitmap images.
75.05	Demonstrate understanding of the software workspace (menus/palettes).
75.06	Demonstrate software navigation (views, tabs, zoom).
75.07	Use drawing tools to create, combine and edit basic shapes.
75.08	Transform content (scale, rotation, position).
75.09	Use pen and pencil tools to draw/edit straight and curved paths.
75.10	Use color and painting tools (patterns, gradients, color palettes).
75.11	Work with type (formatting, font palette, paths).
75.12	Use layers (creating, locking, viewing, pasting, merging).
75.13	Use blending (gradients, objects).
75.14	Use brushes.
75.15	Explore file exporting options and round trip workflows with page layout software.
75.16	Demonstrate knowledge of bleed for vector and bitmap design software.
75.17	Demonstrate knowledge of bleed for vector and image editing/authoring software.
76.0	Split designs into multiple hoops. The student will be able to:
76.01	Split large embroidery designs to fit hoop.
76.02	Align split designs into position for sewing.

Course Number: CTE0012
Occupational Completion Point: E
CAD Patternmaker I -- 300 Hours

77.0 Draft foundation patterns, advanced darts, yokes, flanges, tucks, collars and cowls using the flat-pattern method of drafting and computer-aided drafting (CAD) software. The student will be able to:

77.01 Draft a men's foundation set.

77.02 Draft and explain the differences between tuck-darts, pleats, flares and gathers.

77.03 Draft various dart clusters.

77.04 Draft and describe the differences between graduated, radiating, parallel, asymmetric and intersecting darts.

77.05 Draft various front and back yokes (e.g., inverted box pleat, gathers, action pleat).

77.06 Draft various flanges (tuck dart flange, flange to waist, inset flange).

77.07 Draft various tucks.

77.08 Draft various collars for women.

77.09 Draft various collars for children.

77.10 Draft various collars for men.

77.11 Draft various built-up necklines.

77.12 Draft various inset bands.

77.13 Draft various types of cowls.

77.14 Construct multiple garments based on the basic foundation garment with techniques learned through coursework.

78.0 Draft sleeves, cuffs, contours and skirts using the flat-pattern method of drafting and CAD software. The student will be able to:

78.01 Define and explain terminology related to sleeves.

78.02 Draft various sleeves for women.

78.03 Draft various sleeves for children.

78.04 Draft various sleeves for men.

78.05 Draft various shirt cuffs.

78.06	Draft various shirts for a woman (three shirt and blouse foundations, basic sleeves, yoke shirt, shirt facing and band variations).
78.07	Draft a basic shirt for a man including cuffs and plackets.
78.08	Draft various shirts for children.
78.09	Describe different types of contouring (empire style line, strapless bra top, surplice, cutout armholes, and necklines).
78.10	Draft using a contour guide pattern.
78.11	Draft a garment with various contour style lines.
78.12	Describe the four skirt foundations (straight, A-shape, pegged, bell shape).
78.13	Describe different skirt characteristics (sweep, movement, break point).
78.14	Draft various skirts for women.
78.15	Draft various skirts for children.
78.16	Construct multiple garments based on the basic foundation garment with techniques learned through coursework.

Course Number: CTE0013
Occupational Completion Point: E
CAD Patternmaker II – 300 Hours

79.0	Draft various articles of clothing using the flat-pattern method of drafting and CAD software. The student will be able to:
79.01	Draft various dresses for women.
79.02	Draft various dresses for children.
79.03	Draft various pants.
79.04	Draft various jeans.
79.05	Draft various waistbands.
79.06	Draft for various pant derivatives.
79.07	Draft various jumpsuits.
79.08	Draft various pants and pants derivatives for children.

79.09	Draft various trousers for men.
79.10	Draft slacks for men.
79.11	Draft various jeans for men.
79.12	Draft the men's jacket foundation.
79.13	Draft variations of the men's jacket foundation.
79.14	Demonstrate an understanding of correct fit for a man's suit jacket.
79.15	Draft various casual men's shirts.
79.16	Draft various vests.
79.17	Draft various bias cut patterns.
80.0	Use illustration software for patternmaking. The student will be able to:
80.01	Evaluate industry standard illustration software packages.
80.02	Identify characteristics of vector and bitmap images.
80.03	Demonstrate understanding of the software workspace (menus/palettes).
80.04	Demonstrate software navigation (views, tabs, zoom).
80.05	Use drawing tools to create, combine and edit basic shapes.
80.06	Transform content (scale, rotation, position).
80.07	Use pen and pencil tools to draw/edit straight and curved paths.
80.08	Use color and painting tools (patterns, gradients, color palettes).
80.09	Work with type (formatting, font palette, paths).
80.10	Use layers (create, lock, view, paste and merge).
80.11	Use blending tools (gradients, objects).
80.12	Use brushes.
80.13	Explore file exporting options and round trip workflows with page layout software.

80.14	Demonstrate knowledge of bleed for vector and bitmap design software.
80.15	Demonstrate knowledge of bleed for vector and image editing/authoring software.
80.16	Construct multiple garments based on the basic foundation garment with techniques learned through coursework.
81.0	Draft various stretch garments using the flat-pattern method of drafting and computer-aided drafting (CAD) software. The student will be able to:
81.01	Draft a foundation pattern for knits for women.
81.02	Draft a foundation pattern for knits for men.
81.03	Draft a foundation pattern for knits for children.
81.04	Draft various patterns for active wear.
81.05	Draft various patterns for dancewear.
81.06	Draft various patterns for swimwear.
81.07	Draft various styles of bodysuits.
81.08	Draft various tights for children.
81.09	Draft various leotards for children.
81.10	Draft various swimwear garments for children.
81.11	Draft various undergarments for women.
81.12	Draft various shapewear for women.
81.13	Construct multiple garments based on the basic foundation garment with techniques learned through coursework.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

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On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

Basic Skills

In Career Certificate Programs offered for 450 hours or more, in accordance with Rule 6A-10.040, F.A.C., the minimum basic skills grade levels required for postsecondary adult career and technical students to complete this program are: Computation (Mathematics) and Communications (Reading and Language Arts). These grade level numbers correspond to a grade equivalent score obtained on a state designated basic skills examination.

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instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

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**Florida Department of Education
Curriculum Framework**

Program Title: Telecommunications and Fiber Optics Technician
Program Type: Career Preparatory
Career Cluster: Arts, A/V Technology & Communication

Career Certificate Program		
Program Number	K600300	
CIP Number	0647010306	
Grade Level	30, 31	
Program Length	460 hours	
Teacher Certification	Refer to the Program Structure section.	
CTSO	SkillsUSA	
SOC Codes (all applicable)	Please see the CIP to SOC Crosswalk located at the link below.	
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml	
Basic Skills Level	Computation (Mathematics): 9	Communications (Reading and Language Arts): 9

Purpose

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Arts, A/V Technology & Communication career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Arts, A/V Technology & Communication career cluster.

The content includes but is not limited to fundamentals of telecommunications systems, fiber optic cable installation and maintenance, network infrastructure design, signal transmission principles, and troubleshooting techniques for both copper and fiber-based systems. Students will gain hands-on experience with industry-standard tools and equipment, learn to interpret technical diagrams and specifications, and develop skills in project management and customer service. The program also covers safety protocols, industry regulations, and emerging technologies in the field of telecommunications. Upon completion, students will be well-prepared for entry-level positions in the telecommunications industry and will have the opportunity to pursue industry certifications such as the Fiber Optics Association (FOA) Certified Fiber Optic Technician (CFOT), Electronics Technicians Association (ETA) Fiber Optics Installer (FOI) and CompTIA Network+ certifications.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Program Structure

This program is a planned sequence of instruction consisting of four (4) occupational completion points.

This program is comprised of courses which have been assigned course numbers in the SCNS (Statewide Course Numbering System) in accordance with Section (s.) 1007.24(1), Florida Statutes (F.S). Career and Technical credit shall be awarded to the student on a transcript in accordance with s.1001.44(3)(b), F.S.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the postsecondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length
A	TCN0300	Telecommunications Fundamentals	TELCOM 7G	115 hours
B	TCN0310	Network Cabling and Installation		115 hours
C	TCN0312	Fiber Optics and Splicing Techniques		115 hours
D	TCN0320	Advanced Telecommunications Systems		115 hours

National Standards (NS)

Programs identified as having Industry or National Standards have been crosswalked with the corresponding standards and/or benchmarks.

Industry or National Standards for the Telecommunications and Fiber Optics Technician program can be found using the following links:

<https://www.thefoa.org/>, <https://www.comptia.org/certifications/network> and https://www.etai.org/fiber_cabling.html.

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.
2. Apply appropriate academic and technical skills.
3. Attend to personal health and financial well-being.
4. Communicate clearly, effectively and with reason.
5. Consider the environmental, social and economic impacts of decisions.
6. Demonstrate creativity and innovation.
7. Employ valid and reliable research strategies.
8. Utilize critical thinking to make sense of problems and persevere in solving them.
9. Model integrity, ethical leadership and effective management.
10. Plan education and career path aligned to personal goals.
11. Use technology to enhance productivity.
12. Work productively in teams while using cultural/global competence.

Standards

After successfully completing this program, the student will be able to perform the following:

- 01.0 Demonstrate knowledge of workplace safety practices.
- 02.0 Apply basic work practices and customer service skills.
- 03.0 Demonstrate proficiency in basic DC circuitry.
- 04.0 Demonstrate proficiency in basic AC circuitry.
- 05.0 Explain electrical hazards and safety procedures.
- 06.0 Identify and use common hand and power tools in telecommunications.
- 07.0 Explain industry code of conduct and regulatory compliance.
- 08.0 Demonstrate basic understanding of telecommunications systems architecture.
- 09.0 Identify types of cables and connectors used in telecommunications.
- 10.0 Demonstrate proficiency in cable installation techniques.
- 11.0 Install, terminate, and test twisted pair cabling systems.
- 12.0 Install, terminate, and test coaxial cable systems.
- 13.0 Demonstrate proficiency in aerial and underground cable placement.
- 14.0 Apply proper cable management and cable bonding practices.
- 15.0 Use cable testing equipment to validate network connections.
- 16.0 Troubleshoot and repair basic cable system faults.
- 17.0 Demonstrate knowledge of network topologies and configurations.
- 18.0 Explain building construction impacts on cable routing and installation.
- 19.0 Demonstrate understanding of fiber optic transmission principles.
- 20.0 Identify fiber optic cable types and connectors.
- 21.0 Demonstrate proficiency in fiber optic cable preparation and termination.
- 22.0 Perform fiber optic splicing techniques (fusion and mechanical).
- 23.0 Test and validate fiber optic connections using industry-standard equipment.
- 24.0 Install and configure fiber distribution systems.
- 25.0 Troubleshoot and repair fiber optic systems.
- 26.0 Apply safety practices specific to fiber optic installations.
- 27.0 Explain the principles of wavelength division multiplexing.
- 28.0 Demonstrate proficiency in hybrid fiber-coaxial (HFC) systems.
- 29.0 Explain digital signal processing in telecommunications.
- 30.0 Demonstrate understanding of wireless telecommunications technologies.
- 31.0 Install and configure various telecommunications services (voice, data, video).
- 32.0 Perform advanced troubleshooting of complex telecommunications issues.
- 33.0 Demonstrate proficiency in using specialized test equipment.
- 34.0 Explain emerging trends and technologies in telecommunications.
- 35.0 Prepare technical documentation and reports.
- 36.0 Demonstrate understanding of telecommunications project management.
- 37.0 Prepare for industry certifications relevant to telecommunications.

**Florida Department of Education
Student Performance Standards**

Program Title: Telecommunications and Fiber Optics Technician
Career Certificate Program Number: K600300

Course Number: TCN0300
Occupational Completion Point: OCP A
Telecommunications Fundamentals – 115 Hours

01.0	Demonstrate knowledge of workplace safety practices. The student will be able to:
01.01	Identify common workplace hazards in telecommunications.
01.02	Demonstrate proper use of personal protective equipment (PPE).
01.03	Explain OSHA regulations relevant to telecommunications.
01.04	Perform a job safety analysis for common telecommunications tasks.
02.0	Apply basic work practices and customer service skills. The student will be able to:
02.01	Demonstrate professional communication with customers.
02.02	Explain the importance of work ethics in telecommunications.
02.03	Practice time management and job prioritization.
02.04	Role-play common customer interaction scenarios.
03.0	Demonstrate proficiency in basic DC circuitry. The student will be able to:
03.01	Measure voltage, current, and resistance using a multimeter.
03.02	Calculate power in DC circuits using Ohm's law.
03.03	Construct and analyze series and parallel DC circuits.
03.04	Troubleshoot basic DC circuit faults.
04.0	Demonstrate proficiency in basic AC circuitry. The student will be able to:
04.01	Explain the characteristics of AC signals.
04.02	Measure AC voltage and current using appropriate instruments.
04.03	Describe the behavior of capacitors and inductors in AC circuits.
04.04	Analyze simple AC circuits.
05.0	Explain electrical hazards and safety procedures. The student will be able to:

05.01	Identify potential electrical hazards in telecommunications work.
05.02	Demonstrate proper lockout/tagout procedures.
05.03	Explain grounding and its importance in electrical safety.
05.04	Perform a risk assessment for electrical work.
06.0	Identify and use common hand and power tools in telecommunications. The student will be able to:
06.01	Demonstrate proper use of cable strippers, crimpers, and punch-down tools.
06.02	Operate power drills and fish tape for cable installation.
06.03	Use tone generators and probe kits for cable tracing.
06.04	Maintain and inspect tools for safety and functionality.
07.0	Explain industry code of conduct and regulatory compliance. The student will be able to:
07.01	Describe the importance of customer privacy in telecommunications.
07.02	Explain FCC regulations relevant to telecommunications work.
07.03	Demonstrate understanding of ethical considerations in the industry.
07.04	Discuss the impact of non-compliance on business operations.
08.0	Demonstrate basic understanding of telecommunications systems architecture. The student will be able to:
08.01	Explain the components of a basic telecommunications network.
08.02	Describe the function of central offices and local exchanges.
08.03	Identify different types of telecommunications services (voice, data, video).
08.04	Explain the concept of the "last mile" in telecommunications.
09.0	Identify types of cables and connectors used in telecommunications. The student will be able to:
09.01	Distinguish between different types of copper cabling (Cat5e, Cat6, coaxial).
09.02	Identify common fiber optic cable types (single-mode, multi-mode).
09.03	Explain the appropriate use cases for various cable types.
09.04	Demonstrate proper cable handling and storage techniques.

Course Number: TCN0310
Occupational Completion Point: OCP B
Network Cabling and Installation – 115 Hours

10.0 Demonstrate proficiency in cable installation techniques. The student will be able to:

10.01	Plan cable routes considering building structure and existing utilities.
10.02	Install cable support systems (J-hooks, cable trays).
10.03	Demonstrate proper cable pulling techniques.
10.04	Label and organize cables according to industry standards.
11.0	Install, terminate, and test twisted pair cabling systems. The student will be able to:
11.01	Terminate RJ45 connectors on Cat5e/Cat6 cables.
11.02	Perform cable certification tests using appropriate test equipment.
11.03	Install and terminate patch panels and wall plates.
11.04	Troubleshoot common twisted pair cabling issues.
12.0	Install, terminate, and test coaxial cable systems. The student will be able to:
12.01	Prepare coaxial cable ends for termination.
12.02	Install F-type and BNC connectors on coaxial cable.
12.03	Test coaxial cable installations for signal quality.
12.04	Implement proper grounding techniques for coaxial systems.
13.0	Demonstrate proficiency in aerial and underground cable placement. The student will be able to:
13.01	Explain safety considerations for aerial work.
13.02	Demonstrate proper techniques for lashing aerial cable.
13.03	Install underground conduit and pull boxes.
13.04	Perform cable pulling in underground conduits.
14.0	Apply proper cable management and cable bonding practices. The student will be able to:
14.01	Implement proper cable bundling and tie-wrap techniques.
14.02	Install and ground bonding blocks.
14.03	Demonstrate cable routing in telecom closets and data centers.
14.04	Explain the importance of maintaining bend radius in cable installation.
15.0	Use cable testing equipment to validate network connections. The student will be able to:
15.01	Operate cable analyzers to certify installations.
15.02	Use Time Domain Reflectometers (TDR) to locate cable faults.

15.03	Perform continuity and polarity tests on various cable types.
15.04	Interpret and document test results.
16.0	Troubleshoot and repair basic cable system faults. The student will be able to:
16.01	Diagnose common physical layer issues in networks.
16.02	Repair damaged cable jackets and conductors.
16.03	Replace faulty connectors and terminations.
16.04	Document troubleshooting steps and resolutions.
17.0	Demonstrate knowledge of network topologies and configurations. The student will be able to:
17.01	Explain common network topologies (bus, star, ring, mesh).
17.02	Describe the OSI model and its relevance to cabling.
17.03	Implement basic network configurations.
17.04	Explain the impact of cabling on network performance.
18.0	Explain building construction impacts on cable routing and installation. The student will be able to:
18.01	Interpret basic architectural and electrical drawings.
18.02	Identify common building materials and their impact on signal propagation.
18.03	Explain techniques for cable routing through different building structures.
18.04	Demonstrate knowledge of fire stopping requirements for cable installations.

Course Number: TCN0312
Occupational Completion Point: OCP C
Fiber Optics and Splicing Techniques – 115 Hours

19.0	Demonstrate understanding of fiber optic transmission principles. The student will be able to:
19.01	Explain the basic principles of light transmission in optical fibers.
19.02	Describe the differences between single-mode and multi-mode fibers.
19.03	Discuss bandwidth and attenuation in fiber optic systems.
19.04	Explain the role of optical transmitters and receivers.
20.0	Identify fiber optic cable types and connectors. The student will be able to:
20.01	Distinguish between loose tube and tight buffered fiber cables.
20.02	Identify common fiber connector types (SC, LC, ST, FC).

20.03	Explain the characteristics and use cases of various fiber types.
20.04	Demonstrate proper handling and cleaning of fiber optic connectors.
21.0	Demonstrate proficiency in fiber optic cable preparation and termination. The student will be able to:
21.01	Properly strip and clean fiber optic cables.
21.02	Cleave fibers using precision cleavers.
21.03	Terminate fibers using epoxy and crimp-on connectors.
21.04	Polish fiber optic connectors to industry standards.
22.0	Perform fiber optic splicing techniques (fusion and mechanical). The student will be able to:
22.01	Prepare fibers for splicing.
22.02	Operate a fusion splicer to join fibers.
22.03	Perform mechanical splices using various splice technologies.
22.04	Protect splices using heat shrink sleeves and splice enclosures.
23.0	Test and validate fiber optic connections using industry-standard equipment. The student will be able to:
23.01	Use Optical Time Domain Reflectometer (OTDR) for cable testing.
23.02	Perform end-to-end attenuation testing using a light source and power meter.
23.03	Conduct visual fault location using visual fault locators.
23.04	Interpret and document fiber optic test results.
24.0	Install and configure fiber distribution systems. The student will be able to:
24.01	Install fiber distribution panels and splice trays.
24.02	Implement proper cable management in fiber installations.
24.03	Configure passive optical networks (PON).
24.04	Demonstrate knowledge of fiber to the premises (FTTP) architectures.
25.0	Troubleshoot and repair fiber optic systems. The student will be able to:
25.01	Diagnose common fiber optic transmission problems.
25.02	Locate fiber breaks and high-loss events using OTDR.
25.03	Perform emergency fiber repairs in the field.
25.04	Implement redundancy in fiber optic networks.

26.0	Apply safety practices specific to fiber optic installations. The student will be able to:
26.01	Demonstrate safe handling of optical power sources.
26.02	Explain proper disposal of fiber optic materials.
26.03	Use appropriate eye and skin protection when working with fibers.
26.04	Implement safety procedures for working with fiber cleaves and shards.
27.0	Explain the principles of wavelength division multiplexing. The student will be able to:
27.01	Describe the concept of WDM and its benefits.
27.02	Explain the differences between CWDM and DWDM.
27.03	Discuss the components used in WDM systems.
27.04	Calculate channel capacity in WDM systems.
28.0	Demonstrate understanding of fiber optic transmission principles. The student will be able to:
28.01	Explain the basic principles of light transmission in optical fibers.
28.02	Describe the differences between single-mode and multi-mode fibers.
28.03	Discuss bandwidth and attenuation in fiber optic systems.
28.04	Explain the role of optical transmitters and receivers.
29.0	Identify fiber optic cable types and connectors. The student will be able to:
29.01	Distinguish between loose tube and tight buffered fiber cables.
29.02	Identify common fiber connector types (SC, LC, ST, FC).
29.03	Explain the characteristics and use cases of various fiber types.
29.04	Demonstrate proper handling and cleaning of fiber optic connectors.

Course Number: TCN0320

Occupational Completion Point: OCP D

Advanced Telecommunications Systems – 115 Hours

30.0	Demonstrate proficiency in hybrid fiber-coaxial (HFC) systems. The student will be able to:
30.01	Explain the architecture of HFC networks.
30.02	Install and configure cable modems and set-top boxes.
30.03	Troubleshoot signal quality issues in HFC systems.
30.04	Perform RF measurements in coaxial portions of HFC networks.

31.0	Explain digital signal processing in telecommunications. The student will be able to:
31.01	Describe analog-to-digital and digital-to-analog conversion.
31.02	Explain modulation techniques (QAM, OFDM).
31.03	Discuss the impact of compression on signal quality.
31.04	Demonstrate understanding of error correction techniques.
32.0	Demonstrate understanding of wireless telecommunications technologies. The student will be able to:
32.01	Explain basic principles of radio frequency (RF) transmission.
32.02	Describe cellular network architectures (4G, 5G).
32.03	Install and configure Wi-Fi networks.
32.04	Perform basic troubleshooting of wireless systems.
33.0	Install and configure various telecommunications services (voice, data, video). The student will be able to:
33.01	Set up Voice over IP (VoIP) systems.
33.02	Configure data services on customer premises equipment.
33.03	Install and troubleshoot digital video services.
33.04	Explain QoS requirements for different services.
34.0	Perform advanced troubleshooting of complex telecommunications issues. The student will be able to:
34.01	Use protocol analyzers to diagnose network issues.
34.02	Troubleshoot inter-service interference problems.
34.03	Diagnose and resolve intermittent connectivity issues.
34.04	Perform root cause analysis on complex system failures.
35.0	Demonstrate proficiency in using specialized test equipment. The student will be able to:
35.01	Operate spectrum analyzers for RF analysis.
35.02	Use protocol analyzers for data network troubleshooting.
35.03	Perform bit error rate testing (BERT) on digital circuits.
35.04	Conduct VoIP quality testing using appropriate tools.
36.0	Explain emerging trends and technologies in telecommunications. The student will be able to:
36.01	Discuss the evolution towards all-IP networks.

36.02	Explain concepts of software-defined networking (SDN)
36.03	Describe the Internet of Things (IoT) and its impact on telecommunications
36.04	Discuss emerging 5G and beyond technologies
37.0	Prepare technical documentation and reports. The student will be able to:
37.01	Create as-built documentation for installations.
37.02	Write clear and concise technical reports.
37.03	Develop and maintain network diagrams.
37.04	Document standard operating procedures (SOPs).

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