FLORIDA DEPARTMENT OF EDUCATION
fldoe.org

BACCALAUREATE PROPOSAL APPLICATION
Form No. BAAC-02

Section 1007.33(5)(d), Florida Statutes (F.S.), and Rule 6A-14.095, Florida Administrative Code (F.A.C.), outline the requirements for Florida College System baccalaureate program proposals. The completed proposal form, incorporated in Rule 6A-14.095, F.A.C., Site Determined Baccalaureate Access, shall be submitted by the college president to the chancellor of the Florida College System at ChancellorFCS@fldoe.org.

CHECKLIST

The proposal requires completion of the following components:
☒Institution Information
☒Program summary
☒Program description
☒Workforce demand, supply, and unmet need
☒Student costs: tuition and fees
☒Enrollment projections and funding requirements
☒Planning process
☒Program implementation timeline
☒Facilities and equipment specific to program area
☒Library and media specific to program area
☒Academic content
☒Program termination
☒Supplemental materials

FLORIDA COLLEGE SYSTEM INSTITUTION INFORMATION

Institution Name.	Miami Dade College (MDC)
Institution President.	Madeline Pumariega

PROGRAM SUMMARY

1.1	Program name.	Applied Artificial Intelligence
1.2	Degree type.	☒Bachelor of Science ☐Bachelor of Applied Science
1.3	How will the proposed degree program be delivered? (check all that apply).	☒Face-to-face (F2F) (Entire degree program delivered via F2F courses only) ☐Completely online (Entire degree program delivered via online courses only) ☒Combination of face-to-face/online (Entire degree program delivered via a combination of F2F and online courses)
1.4	Degree Classification of Instructional Program (CIP) code (6-Digit).	11.0102 - Artificial Intelligence
1.5	Anticipated program implementation date.	Fall 2023; 08/21/2023
1.6	What are the primary pathways for admission to the program? Check all that apply.	☒Associate in Arts (AA) ☒Associate in Science (AS) ☐Associate in Applied Science (AAS) If you selected AS/AAS, please specify the program: Associate in Science (AS) in Applied Artificial Intelligence. C.I.P. 1511010200
1.7	Is the degree program a STEM focus area?	☒Yes ☐No
1.8	List program concentration(s) or track(s) (if applicable).	Not Applicable

PROGRAM DESCRIPTION

2.1 This section will serve as an **executive summary of this proposal**. We recommend providing an abbreviated program description including but not limited to: the program demand, current supply, and unmet need in the college's service district; primary pathways to program admission; overview of program curriculum; career path and potential employment opportunities; and average starting salary. Throughout the proposal, please include in-text references to the supplemental materials for reviewers to reference. We encourage approximately 500 words for a sufficient description.

The Bachelor of Science (BS) degree in Applied Artificial Intelligence is designed to meet the demand for artificial intelligence (AI) professionals and will support the prosperity and growth of businesses in Florida. Through a comprehensive curriculum, students in this 120-credit hour program will acquire the knowledge and skills needed for the practical applications of AI. Upper level coursework includes Computer Vision, Natural Language Processing, Machine Learning, Applied Optimization Theory and Decision Making, AI Automation, Applied Simulation, Data Structures, and AI Capstone.

The global AI market size was estimated at US$ 119.78 billion in 2022 and it is expected to hit US$ 1,591.03 billion by 2030 with a registered Compound Annual Growth Rate (CAGR) of 38.1%, from 2022 to 2030. The North America artificial intelligence market was valued at USD 51 billion in 2021.[1] The rapid development of the digital technologies has significantly contributed towards the growth of the global artificial intelligence market in the past few years. Increased investments in areas such as AI and computer science (i.e., Internet of Things, Data Analytics, and Cybersecurity) have grown significantly and fuel the technological consumer demand. These technologies, which range from automotive, healthcare, banking and finance, manufacturing, food and beverages, logistics, and retail, are rapidly transforming the workplace. The BS degree in Applied AI will contribute to meeting the evolving needs of industry and seek to support individuals to receive academic credit for their prior practical knowledge and skills. This will be accomplished through Miami Dade College's (MDC) Prior Learning Assessment (PLA) process, which enables students to earn college credit for their professional experience. This is a valuable opportunity for individuals, including foreign nationals, who are looking to upskill and enter the growing field of applied artificial intelligence.

Teaching and hands-on learning will be enhanced by the facilities, equipment, and artificial intelligence technologies offered at the state-of-the-art Miami Dade College AI Center, while students pursue a structured and continued academic pathway. This program is suited for Associate in Arts (AA) or Associate in Science (AS) students who meet the admission requirements and are interested in gaining a BS degree in Artificial Intelligence (*See Academic*

[1] *Artificial Intelligence (AI) market (by offering: Hardware, software, services; by technology: Machine Learning, natural language processing, context-aware computing, Computer Vision; by deployment: On-premise, cloud; by organization size: Large Enterprises, Small & Medium Enterprises; by Business Function: Marketing and sales, security, finance, law, human resource, other; by end-use:) - global industry analysis, size, share, growth, trends, regional outlook, and forecast 2022 – 2030.* Precedence Research. (n.d.). Retrieved March 21, 2023, from https://www.precedenceresearch.com/artificialintelligence-market

Content). Graduates of this baccalaureate degree will be prepared for immediate entry into the workforce as AI Analysts, Natural Language Processing Specialists, Computer Vision Analysts, Machine Learning Specialists, and AI Programmers. The curriculum also prepares students to continue their education towards an advanced degree in Computer Science or in the STEM fields.

The Florida Department of Economic Opportunity (DEO) reports a much faster than average job growth increase (23.2%) for the combined SOC codes of 15-1245 (Database Administrators and Architects), 15-1251 (Computer Programmers), 15-1256 (Software Developers and Software Quality Assurance Analysts and Testers), 15-1299 (Computer Occupations, all other), and 15-2098 (Data Scientists and Mathematical Science Occupations, All Other). There are a total of 1,033 annual job openings projected for these occupations in Workforce Development Area 23, with an average hourly wage of $45.58 and an average annual salary of $94,815[2]. Currently, none of the institutions in Miami Dade College's local service area offer CIP 11.0102 – Artificial Intelligence, allowing the proposed program to fulfill the workforce demand of these occupations. AI and machine learning jobs are growing rapidly, with industries using them in healthcare, education, marketing, retail and ecommerce, and financial services. Increased demand for AI developers and machine learning users will stem from the continued expansion of software development for artificial intelligence (AI), Internet of Things (IoT), robotics, and other automation applications.

WORKFORCE DEMAND, SUPPLY, AND UNMET NEED

3.1 Describe the workforce demand, supply, and unmet need for graduates of the program that incorporates, at a minimum, the shaded information from Sections 3.1.1 to 3.1.4. For proposed programs without a listed Standard Occupational Classification (SOC) linkage, provide a rationale for the identified SOC code(s). If using a SOC that is not on the CIP to SOC crosswalk, please justify why the SOC aligns with the baccalaureate program.

Applied artificial intelligence is a new and evolving field where jobs with new titles, such as Artificial Intelligence Analysts or Artificial Intelligence Programmers continue to emerge as the applications of AI emerge. Employability of graduates in this developing field is tethered to the depth of their skills and knowledge of AI tools and technologies, and the hands-on experiences this program offers. The conducted crosswalk[3] for the new CIP 11.0102 (Artificial Intelligence) generated SOC codes 15-2051 (Data Scientists) and 15-1252 (Software Developers), which reflects the occupations graduates of this program will be prepared to fill. These are not yet used by the Florida Department of Economic Opportunity, thus 15-1256 (Software Developers and Software Quality Assurance Analysts and Testers) and 15-2098 (Data Scientists and Mathematical Science Occupations, All Other) offers the closest match. Further analysis also generated 15-1251 (Computer Programmers), 15-1245 (Database Administrators and Architects), and 15-1299

[2] *Employment Projections*. (n.d.). Florida Department of Economic Opportunity. Retrieved September 26, 2022, from https://www.floridajobs.org/workforce-statistics/data-center/statisticalprograms/employment-projections [3] *The Classification of Instruction Programs – CIP2020/SOC2018 Crosswalk* (n.d.). National Center for Education Statistics. Retrieved September 26, 2022, from https://nces.ed.gov/ipeds/cipcode/default.aspx?y=56.

(Computer Occupations, all other) as occupations that closely aligns with the emerging profession and on which MDC completed its workforce demand.

A compilation from the Florida Department of Economic Opportunity (DEO) (*Table 3.1.1*) and Lightcast™ labor market analytics (*Table 3.1.2*) demonstrates the aforementioned occupations

have a much faster than average job outlook (2021-2029) with DEO projecting a combined growth of 23.2% and Lightcast projecting growth at 21.8%[2]. There are a total of 1,033 annual job openings projected by the DEO with an average hourly wage of $45.58 and an average annual salary of $94,815 in Workforce Development Area 23. Currently, none of the institutions in Miami Dade College's local service area that offer CIP 11.0102 – Artificial Intelligence. Given that no graduates have been produced, the unmet need is projected at 1,033.

[2] Lightcast. (n.d.). Retrieved September 26, 2022, from https://a.economicmodeling.com/analyst

DEMAND: FLORIDA DEPARTMENT OF ECONOMIC OPPORTUNITY (DEO) EMPLOYMENT PROJECTIONS

3.1.1 The Excel spreadsheet below is set up with predefined formulas. To activate the spreadsheet, right click within the spreadsheet, go to "Worksheet Object", and then "Open". To exit, save any changes and exit out of the spreadsheet. Alternatively, double click anywhere on the table. To exit the spreadsheet, single click anywhere outside of the table.

CLICK HERE FOR INSTRUCTIONS FOR COMPLETING THE DEMAND SECTION

Name/Title	SOC Code	County/ Region	2021	2029	**Level Change	***Total Job Openings	Average Hourly Wage	Annualized Salary	FL	BLS
Database Administrators and Architects	15-1245	Region 23	910	1,073	17.91	655	$ 46.29	$ 96,283	A	B
Computer Programmers	15-1251	Region 23	1,378	1,545	12.12	879	$ 39.50	$ 82,160	PS	B
Software Developers and Software Quality Assurance Analysts and Testers	15-1256	Region 23	5,894	7,977	35.34	5,486	$ 42.61	$ 88,629	B	B
Computer Occupations, all other	15-1299	Region 23	1,639	1,863	13.67	1,165	$ 42.61	$ 88,629	PS	B
Data Scientists and Mathematical Science Occupations, All Other	15-2098	Region 23	81	111	37.04	82	$ 56.91	$ 118,373	B	B
								$ -		
								$ -		
								$ -		
								$ -		
								$ -		
					Total	1033	$ 45.58	$ 94,815		

*Please replace the "Base Year" and "Projected Year" headers with the years reflected in the projection's portal (e.g., Base Year is 2019, Projected Year is 2027).

**Please note that the "Level Change" column in Table 3.1.1 corresponds to the "Percent Growth" employment projections data produced by the DEO.

***Please note that the "Total Job Openings" columns is preset to be divided by 8.

DEMAND: OTHER ENTITY INDEPENDENT OF THE COLLEGE – Lightcast™

3.1.2 The Excel spreadsheet below is set up with predefined formulas. To activate the spreadsheet, right click within the spreadsheet, go to "Worksheet Object", and then "Open". To exit, save any changes and exit out of the spreadsheet. Alternatively, double click anywhere on the table. To exit the spreadsheet, single click anywhere outside of the table.

Occupation			Number of Jobs				Salary		Education Level	
Name/Title	SOC Code	County/ Region	2021	2029	Level Change	Total Job Openings	Average Hourly Wage	Annualized Salary	FL	BLS
Database Administrators	† 15-1242	Region 23	515	573	11.26	376	$ 46.81	$ 97,365	B	B
Database Architects	† 15-1243	Region 23	293	336	14.68	224	$ 59.72	$ 124,218	B	B
Computer Programmers	15-1251	Region 23	896	895	-0.11	496	$ 47.50	$ 98,800	B	B
Software Developers	† 15-1252	Region 23	6,093	7,723	26.75	5,616	$ 48.18	$ 100,214	B	B
Computer Occupations, all Other	15-1299	Region 23	537	690	28.49	496	$ 37.74	$ 78,499	B	B
Data Scientists	† 15-2051	Region 23	1,442	1,690	17.20	1,152	$ 31.37	$ 65,250	B	B
								$ -		
								$ -		
								$ -		
								$ -		
					Total	1045	$ 45.22	$ 94,058		

*Please replace the "Base Year" and "Projected Year" headers with the corresponding years reported.

SUPPLY: NATIONAL CENTER FOR EDUCATION STATISTICS, IPEDS

3.1.3 The Excel spreadsheet below is set up with predefined formulas. To activate the spreadsheet, right click within the spreadsheet, go to "Worksheet Object", and then "Open". To exit, save any changes and exit out of the spreadsheet. Alternatively, double click anywhere on the table. To exit the spreadsheet, single click anywhere outside of the table.

CLICK HERE FOR INSTRUCTIONS FOR COMPLETING THE SUPPLY SECTION: If institutions do not have data available for completers in the service district, please report statewide data. You may note these are statewide figures.

Program		**Number of Degrees Awarded**					
Institution Name	CIP Code	*Most Recent Year	*Prior Year 1	*Prior Year 2	*Prior Year 3	*Prior Year 4	5-year average or average of years available if less than 5-years
Barry University	11.0102	0	0	0	0	0	0
Florida Atlantic University	11.0102	0	0	0	0	0	0
Florida International University	11.0102	0	0	0	0	0	0
St. Thomas University	11.0102	0	0	0	0	0	0
University of Miami	11.0102	0	0	0	0	0	0
	Total	0	0	0	0	0	0

* Most Recent Year is 2021 through 2017 for Prior Year 4. Please note headings were protected and thus did not allow modifications.

ESTIMATES OF UNMET NEED

3.1.4 The Excel spreadsheet below is set up with predefined formulas. To activate the spreadsheet, right click within the spreadsheet, go to “Worksheet Object”, and then “Open”. To exit, save any changes and exit out of the spreadsheet. Alternatively, double click anywhere on the table. To exit the spreadsheet, single click anywhere outside of the table.

CLICK HERE FOR INSTRUCTIONS FOR COMPLETING THE ESTIMATES OF UNMET NEED SECTION: If institutions do not have data available for completers in the service district, please report statewide data. You may note these are statewide figures.

	Demand	**Supply**		**Range of Estimated Unmet Need**	
	(A)	(B)	(C)	(A-B)	(A-C)
	Total Job Openings	Most Recent Year	5-year average or average of years available if less than 5 years	Difference	Difference
DEO	1,033	0	0	1033	1033
Lightcast	1,045	0	0	1045	1045

3.2 Describe any other evidence of workforce demand and unmet need for graduates as selected by the institution, which may include qualitative or quantitative data and information not reflected in the data presented in Sections 3.1.1 to 3.1.4, such as local economic development initiatives, emerging industries in the area, or evidence of rapid growth.

Artificial intelligence (AI) has grown at impressive rates in recent years with many experts predicting it to contribute to the fourth industrial revolution affecting all industries and society at large[5]. From healthcare to banking, AI solutions are already transforming many facets of these industries with its capabilities to increase productivity and operational efficiencies. Reflecting the need of virtually all businesses to maintain a competitive edge, Gartner reports a 270% growth in use of AI technologies just in the past four years[6]. As AI technologies proliferate, so will the need for institutions of higher learning to create a robust AI workforce that supports local industries. The proposed BS in Applied AI is poised to contribute to an AI-enabled workforce that can contribute to the effective use of predictive analytics, leveraging smart chatbots and the implementation of AI tools for automation, to name a few. The program was designed in close collaboration with an Artificial Intelligence Team of business representatives who have prescribed the knowledge and skills they expect "right-skilled" graduates to possess 24-48 months into the future.

According to LinkedIn's 2021 Jobs on the Rise U.S. Report, one job category that continued to flourish in spite of the often-devastating impact the Covid-19 pandemic had on the economy was artificial intelligence practitioners, listing it as the top emerging job trend in its report[7]. This is representative of the job growth in the South Florida region (Miami-Dade, Broward, and Palm Beach Counties) with a Lightcast analysis conducted for job openings in calendar 2021 through 8 months of 2022 using "artificial intelligence" in the job titles. 100 positions were posted with varying titles, such as Artificial Intelligence Analysts, Artificial Intelligence Programmers, and Artificial Intelligence Engineers. Companies represented by the job postings included but were not limited to Deloitte, Baptist Health, Accenture, Booz Allen Hamilton, and Anthem Blue Cross. It is noteworthy to mention that few AI positions have AI in the title, many still use the traditional Software Engineers, Data Scientist/Analysts, Programmers or Database Architects/ Administrators.

[5] Oosthuizen, R. (n.d.). The Fourth Industrial Revolution – Smart Technology, Artificial Intelligence, Robotics and Algorithms: Industrial Psychologists in Future Workplaces. National Institute of Health. Retrieved September 28, 2022, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9301265/. [6] Partida, D. (2021, April 21). The Top 6 Ways AI Is Improving Business Productivity. Techopedia. Retrieved September 30, 2022, from https://www.techopedia.com/the-top-6-ways-ai-is-improvingbusiness-productivity-in-2021/2/34505 [7] Jobs on the Rise Report, United States. Linkedin Talent Solutions. (2021). Retrieved September 27, 2022, from https://business.linkedin.com/talent-solutions/resources/talent-acquisition/jobs-on-therise-us

3.3 If the education level for the occupation identified by the Florida Department of Economic Opportunity (DEO) or the Bureau of Labor Statistics (BLS) presented in Sections 3.1.1 to 3.1.2 is below or above the level of a baccalaureate degree, provide justification for the inclusion of that occupation in the analysis.
The Florida Department of Economic Opportunity (DEO) and the Bureau of Labor Statistics (BLS) identifies the baccalaureate as the level of education for SOC codes 15-1256 (Software Developers and Software Quality Assurance Analysts and Testers) and 15-2098 (Data Scientists and Mathematical Science Occupations, All Other). Although the DEO specifies an Associate degree as the educational requirement for 15-1245 (Database Administrators and Architects), and postsecondary for 15-1251 (Computer Programmers) and 15-1299 (Computer Occupations, all other), the U.S. Bureau of Labor Statistics (BLS) indicates that a bachelor's degree is the entry-level education required. This requirement was further validated by the Lightcast workforce analysis on Table 3.1.2, where all aforementioned SOC codes require a Bachelor's degree.

3.4 Describe the career path and potential employment opportunities for graduates of the program.
Students enrolled in the Associate in Science (AS) in Applied Artificial Intelligence will have a structured and continued academic pathway leading to the BS in Applied Artificial Intelligence. The program is also suited for Associate in Arts (AA) or other Associate in Science (AS) students who meet the admission requirements and are interested pursuing a baccalaureate in Applied Artificial Intelligence. Graduates of this program will be prepared for immediate entry into the workforce as AI Analysts, Natural Language Processing Specialists, Computer Vision Analysts, Machine Learning Specialists, AI Programmers, and other related positions that are expected to continue to emerge. The BS in Applied AI was also designed to prepare students for graduate level work in Artificial Intelligence.

STUDENT COSTS: TUITION AND FEES

4.1 The Excel spreadsheets in Sections 4.1 - 4.3 are set up with predefined formulas. To activate the spreadsheet, right click within the spreadsheet, go to "Worksheet Object", and then "Open". To exit, save any changes and exit out of the spreadsheet. Alternatively, double click anywhere on the table. To exit the spreadsheet, single click anywhere outside of the table.

Complete the following table by entering the anticipated cost for a baccalaureate degree (tuition and fees for lower-division and upper-division credit hours) at the proposing FCS institution.

	Cost per credit hour	Number of credit hours	Total cost
Tuition & Fees for lower division:	$ 118.22	85	$ 10,049
Tuition & Fees for upper division:	$ 129.89	35	$ 4,546
Tuition & Fees (Total):		120	$ 14,595

☒ Select if the program will be designated such that an eligible student will be able to complete the program for a total cost of no more than $10,000 in tuition and fees. If selected, please indicate below how the institution will make up any difference above $10,000 (e.g., institutional scholarships).

- Miami Dade College uses a merit scholarship program to help defray the cost of baccalaureate programs that exceed $10,000 for qualifying students.
- Qualifying students may apply for Pell Grants and Bright Futures scholarships through the U.S. Department of Education Federal Student Aid office.

The cost per credit hour listed is for Florida residents for the 2022-2023 academic year.

4.2 Complete the following table with the estimated cost for a baccalaureate degree (tuition and fees) at each state university in the college's service district or at each state university operating on a site in the college's service district. If the institution does not provide the tuition cost per credit hour, please provide t h e cost information provided on the institution's website. Please complete this section even if institutions in the service district do not offer the same or a comparable baccalaureate program.

Institution Name	Cost per credit hour (Tuition & Fees)	Number of credit hours	Total cost
Florida International University	$ 205.57	120	$ 24,668
			$ -
			$ -
			$ -
			$ -

4.3 Complete the following table with the estimated cost for a baccalaureate degree (tuition and fees) at each nonpublic institution in the college's service district or at each nonpublic institution operating on a site in the college's service district. If the institution does not provide the tuition cost per credit hour, please provide the cost information provided on the institution's website. Please complete this section even if institutions in the service district do not offer the same or a comparable baccalaureate program.

Institution Name	Cost per credit hour (Tuition & Fees)	Number of credit hours	Total cost
Barry University	$ 1,083.33	120	$ 130,000
St. Thomas University	$ 1,098.00	120	$ 131,760
University of Miami	$ 1,906.47	120	$ 228,776
			$ -
Cost per tuition based on full-time enrollment of 15 credits per major terms (fall and spring)			$ -

PROJECTED BACCALAUREATE PROGRAM ENROLLMENT

5.1 To activate the Excel spreadsheet, right click within the spreadsheet, go to “Worksheet Object”, and then “Open”. To exit, save any changes and exit out of the spreadsheet. Alternatively, double click anywhere on the table. To exit the spreadsheet, single click anywhere outside of the table.

Complete the following table by entering the projected enrollment information for the first four years of program implementation. Unduplicated headcount enrollment refers to the actual number of students enrolled. Full-time equivalent (FTE) refers to the fulltime equivalent of student enrollment.

		Year 1	Year 2	Year 3	Year 4
5.2	Unduplicated headcount enrollment:	30	60	90	120
5.3	Program Student Credit Hours (Resident)	600	1200	1800	2250
5.4	Program Student Credit Hours (Non-resident)	0	0	0	0
5.5	Program FTE - Resident (Hours divided by 30)	20	40	60	75
5.6	Program FTE - Non-resident (Hours divided by 30)	0	0	0	0
5.7	Total Program FTE	20	40	60	75

PROJECTED DEGREES AND WORKFORCE OUTCOMES

6.1 The Excel spreadsheet below is set up with predefined formulas. To activate the spreadsheet, right click within the spreadsheet, go to “Worksheet Object”, and then “Open”. To exit, save any changes and exit out of the spreadsheet. Alternatively, double click anywhere on the table. To exit the spreadsheet, single click anywhere outside of the table.

Complete the following table by entering the projected number of degrees awarded, the projected number of graduates employed, and the projected average starting salary for program graduates for the first four years of program implementation. Please note the “Year 1” column in the “Count of Degrees Awarded” row (6.2) is not likely to have any graduates taking into account length of time to degree completion.

		Year 1	**Year 2**	**Year 3**	**Year 4**
6.2	Count of Degrees Awarded	0	10	27	41
6.3	Number of Graduates Employed	0	8	20	32
6.4	Average Starting Salary	$0	$84,020	$86,540	$89,136

REVENUES AND EXPENDITURES

7.1 The Excel spreadsheet below is set up with predefined formulas. To activate the spreadsheet, right click within the spreadsheet, go to “Worksheet Object”, and then “Open”. To exit, save any changes and exit out of the spreadsheet. Alternatively, double click anywhere on the table. To exit the spreadsheet, single click anywhere outside of the table.

Complete the following table by entering the projected program expenditures and revenue sources for the first four years of program implementation.

		2023/2024	2024/2025	2025/2026	2026/2027
7.2	Program Expenditures:	$ 152,379.00	$ 253,689.00	$ 290,773.00	$ 372,999.00
7.2.1	Instructional Expenses	$ 137,578.00	$ 238,689.00	$ 278,573.00	$ 362,597.00
7.2.2	Operating Expenses	$ 9,900.00	$ 10,000.00	$ 7,100.00	$ 5,200.00
7.2.3	Capital Outlay	$ 4,901.00	$ 5,000.00	$ 5,100.00	$ 5,202.00
7.3	Revenue:	$ 152,379.00	$ 253,689.00	$ 292,253.00	$ 379,929.00
7.3.1	Upper Level - Resident Student Tuition Only	$ 68,843.00	$ 137,685.00	$ 206,528.00	$ 268,486.00
7.3.2	Upper Level - Nonresident Student Fees	$ -	$ -	$ -	$ -
7.3.3	Upper Level - Other Student Fees	$ 28,575.00	$ 57,150.00	$ 85,725.00	$ 111,443.00
7.3.4	Florida College System Program Funds	$ -	$ -	$ -	$ -
7.3.5	Other Sources	$ 54,961.00	$ 58,854.00		
7.4	Carry Forward:				
7.4.1	Total Funds Available	$ 152,379.00	$ 253,689.00	$ 292,253.00	$ 379,929.00
7.4.2	Total Unexpended Funds (carry forward)	$ -	$ -	$ (1,480.00)	$ (6,930.00)

*Please replace the “Year 1” through “Year 4” headers with the corresponding years reported.

ENROLLMENT PROJECTIONS AND FUNDING REQUIREMENTS

8.1 Provide a narrative justifying the estimated program enrollments and outcomes as they appear in Sections 5.1 – 6.1.

Enrollment projections are based on 30 students beginning the program upper division coursework in Spring 2024, growing the following academic year to 60, and a predicted incremental increase of 120 students by the end of academic year 4 (2029-2030). The projected number of graduates employed for year two is six (6) with an average starting salary of $84,020. This number will grow to 23 with an average starting salary of $89,136 by year 4. These outcomes are based on historical data of our newest BS in Cybersecurity program, historical graduation data, and employment projections for the region.

8.2 Provide a brief explanation of the sources and amounts of revenue that will be used to start the program as well as expenditures as they appear in Section 7.1.

Revenue from student fees and grant sources is projected to be $1,078,250 for the 4-year startup period. Revenue will be primarily generated from tuition and fees consisting of 30 students (20 FTE's) beginning Spring 2024. Enrollment is expected to grow to 120 students (100 FTEs) by year 4/academic year 2026-2027. The projected expenditures for academic years 2023 through 2026 averages at $267,460 per year. The majority of expenses stem from faculty salaries and benefits, with a small portion going to materials and supplies, library support and minor equipment. The proposed program builds on the existing MDC Engineering and Technology departmental infrastructure and the existing Artificial Intelligence Center; thus, no additional costs are projected. The program is geared to be self-sustained by the third year.

PLANNING PROCESS

9.1 Summarize the internal planning process. In timeline format, please describe the steps your institution took in completing the internal review and approval of the baccalaureate program. For example, summarize actions taken by the academic department proposing the degree, any nonacademic departments, the college-wide curriculum committee, the college president, the Board of Trustees and any other areas.

Fall 2021

- Developed and piloted AI Thinking course with an enrollment of 30 students.
- Awarded NSF grant AI for All to start the development of undergraduate programs in AI at Miami Dade College.

Spring 2022

- The Artificial Intelligence Discipline Committee was formed and begun meeting regularly to discuss plans towards the creation of a baccalaureate degree in Applied AI.

- AI Discipline Committee identified workforce demand and a pathway to careers in applied artificial intelligence.
- Faculty utilized knowledge, skills, and abilities evaluated and prioritized by the Artificial Intelligence Discipline Committee to develop curriculum.
- Lower division coursework that feeds the baccalaureate was drafted.
- Hosted professional development workshop—Leveraging Artificial Intelligence to Advance Student Success—for 300 MDC faculty to raise AI awareness and interest.

Summer 2022

- AI Discipline Committee met regularly to continue discussion and work towards the creation of a baccalaureate degree in Applied AI.
- AI Discipline Committee met with Aaron Burciaga, Chair of Global Analytics Certification Board, Senior Practice Manager, US Federal Partner Professional Services at Amazon Web Services (AWS) to review the knowledge, skills, and abilities all graduates must contain upon successful completion of the baccalaureate degree in Applied AI.
- AI Discipline Committee met to prioritize course offerings and identify sequencing for the baccalaureate degree in Applied AI courses.
- AI Discipline Committee met to identify the required math courses for the baccalaureate degree in Applied AI.
- AI Discipline Committee met to review upper division courses and ensure competencies/learning outcomes are mapped to prioritized applied AI knowledge, skills and abilities.
- AI Discipline Committee met to finalize the pathway and lower division course work that leads to the baccalaureate in Applied AI.

Fall 2022

- AI Discipline Committee met regularly to review and discuss Applied AI baccalaureate degree curriculum.
- AI Discipline Committee met with Professor Habib Matar from Chandler Gilbert Community College to review and discuss proposed AI curriculum.
- AI Discipline Committee met to finalize draft curriculum in preparation for a meeting with the AI Advisory Committee.
- Submitted Notice of Intent through the Curriculum Approval Process.
- The AI Discipline Committee met with the AI Advisory Committee to review draft curriculum. Advisory members congratulated the faculty's approach of utilizing the prioritized applied AI knowledge, skills, and abilities to build curriculum and embraced the presented coursework.
- Faculty met on numerous occasions to finalize program details, including but not limited to program learning outcomes, course requisites, sequencing of coursework, program sheet, and program admissions requirements.
- Three lower division AI courses were approved by the FLDOE. Faculty worked on delivering the courses for spring 2023.

January 2023

- The application for the baccalaureate was submitted for approval to: ○ Academic Leadership Council ○ Campus Academic and Student Support Council (Campus CASSC) ○ Collegewide Academic and Student Support Council (CASSC) ○ Executive Committee

February 2023

- The application for the baccalaureate was submitted to the Board of Trustees for final approval then will be submitted to the Florida Department of Education.

May 2023

- The FLDOE Division of Florida Colleges reviews proposal and provide feedback

July 2023

- The State Board of Education (SBOE) will consider the proposal for approval.

Fall 2023

- Marketing and recruitment planned.

9.2 Summarize the external planning process with the business and industry community. In timeline format, please describe your institution's interactions and engagements with external stakeholders, including but not limited to industry advisory boards meetings, discussions with advisory committees, briefings from local businesses, consultations with employers, and conducting paper and online surveys.

Fall 2021

- Miami Dade College partnered with AI4All to introduce and prepare students for careers in the burgeoning AI industry. The program connects participants with an approachable introduction to AI, internships, career-readiness resources, and a supportive on-campus peer community.

Spring 2022

- Miami Dade College received $15M from James L. Knight Foundation, Miami-Dade County, City of Miami and Miami Downtown Development Authority to expand technology programs, including a baccalaureate in Applied AI.
- The Artificial Intelligence Advisory Committee was created to assist with the development of applied AI curriculum. This committee is comprised of renowned industry professionals from companies such as IBM, Intel, AWS, and McDonalds. These leaders follow the Business Industry Leadership Team (BILT) model, which consists of engaging industry as equal partners in curriculum development, student support, and workforce development.
- AI Advisory Committee first meeting launched with a Kick-Off, where valuable insights were shared about the knowledge, skills, and abilities (KSA) required by employers from graduates of an applied AI industry baccalaureate.

- KSAs were solidified and prioritized via vote by the Artificial Intelligence Advisory Committee.
- Partnered with Intel to implement the Intel® AI for Workforce Program. This program is aimed at educating the next generation of technologists, engineers and inventors in artificial intelligence, and help them launch successful careers in their chosen fields.

Summer 2022

- Survey sent to Artificial Intelligence Advisory Committee members to obtain feedback regarding the required math competencies in support of the Applied AI baccalaureate degree.

Fall 2022

- On September 01, Dr. Michaela Tomova, Vice Provost for Academic Affairs at MDC, submitted the APPRiSe notification.
- Opening of AI Center at Miami Dade College North Campus. The purpose of the AI Center is to serve as a hub for AI innovation in the county and beyond.
- Held an AI Advisory Committee Meeting to obtain feedback and share MDC's progress toward the development of a baccalaureate in Applied AI.
- Received Letters of Support from institutions of higher learning, including: Florida International University, Florida Atlantic University, University of Florida, and the University of Colorado Denver.
- Received Letters of Support from industry partners: Roy E. Lowrance, CEO & Founder of Applied Data Science LLC; Aaron D. Burciaga, Chairman, DataPrime, Inc.; Kirk D. Borne, Chief Science Officer, DataPrime, Inc.; Lance Kallman, President, Searchlight Partners; John Elder IV, Founder & Chair, Elder Research, Inc.; Manuj Aggarwal, Founder/Chief Innovation Officer, TetraNoodle Technologies, Inc.; Achille Ettorre, Managing Partner, Ettorre & Associates, Ltd.
- On October 28, Madeline Pumariega, President at MDC, submitted the Notice of Intent (NOI) to FLDOE. FLDOE shared the NOI with state and private universities for their feedback.

9.3 List external engagement activities with public and nonpublic postsecondary institutions. This list shall include meetings and other forms of communication among external postsecondary institutions regarding evidence of need, demand, and economic impact.

9.3.1 Public Universities in College's Service District

Date(s): September 30, 2022

Institution(s): Florida International University (FIU)

Activity Descriptions and Outcomes:
Manuel Perez, Dean for the School of Engineering, Technology and Design at MDC contacted the Deans of the Colleges of Arts and Sciences, Engineering and Computing, and Health Sciences and Technology to notify them of MDC's intent to submit a proposal for an Applied Artificial Intelligence baccalaureate degree.

Date(s): September 30, 2022

Institution(s): Florida International University (FIU)

Activity Descriptions and Outcomes:
Miami Dade College (MDC) President Madeline Pumariega received a letter of support from FIU Interim Provost, Executive Vice President, and Chief Operating Officer, Dr. Elizabeth M. Bejar in support of the BS in Applied Artificial Intelligence.

9.3.2 Regionally Accredited Institutions in College's Service District

Date(s): September 30, 2022

Institution(s): Barry University, University of Miami, and St. Thomas University

Activity Descriptions and Outcomes:
Manuel Perez, Dean for the School of Engineering, Technology and Design at MDC contacted the Deans of the Colleges of Arts and Sciences, Engineering and Computing, and Health Sciences and Technology to notify them of MDC's intent to submit a proposal for an Applied Artificial Intelligence baccalaureate degree.

9.3.3 Institutions outside of College's Service District (If applicable)

Date(s): September 2021

Institution(s): University of Florida (UF)

Activity Descriptions and Outcomes:
Professor Diego Alvarado from University of Florida met with MDC faculty and academic leadership to discuss the need for AI curriculum and University of Florida's approach to create an interdisciplinary AI curriculum to address the demand to better prepare its students. Professor Alvarado shared competencies for two courses: Fundamentals of AI, and AI Ethics.

Date(s): April 2022 Institution(s): Palm Beach State College (PBSC) Activity Descriptions and Outcomes: MDC's School of Engineering and Technology Leadership Team met Department Chair of Accounting, Business, Office Administration and Computer Science Cluster Co-Chair to exchange resources and inform of MDC's intention to develop an Associate in Science Applied Artificial Intelligence framework to the Florida Department of Education.
Date(s): September 30, 2022 Institution(s): Florida Atlantic University (FAU) Activity Descriptions and Outcomes: Miami Dade College (MDC) President Madeline Pumariega received a letter of support from FAU Associate Dean for Graduate Studies and Professor, Dr. Mihael Cardei in support of the BS in Applied Artificial Intelligence.
Date(s): October 05, 2022 Institution(s): University of Florida (UF) Activity Descriptions and Outcomes: Miami Dade College (MDC) President Madeline Pumariega received a letter of support from UF Dean for UF Herbert Wertheim College of Engineering, Cammy R. Abernathy in support of the BS in Applied Artificial Intelligence.

PROGRAM IMPLEMENTATION TIMELINE		
10.1	Indicate the date the notice was initially posted in APPRiSe.	September 01, 2022
10.2	Indicate the date of District Board of Trustees approval.	February 21, 2023
10.3	Indicate the date the Notice of Intent (NOI) was submitted to DFC.	October 28, 2022
10.4	Indicate the date the completed proposal was submitted to DFC.	April 04, 2023
10.5	Indicate the date the proposal is targeted for State Board of Education (SBOE) consideration. Please note that from the date the DFC receives the finalized proposal, the Commissioner has 45 days to recommend to the SBOE approval or disapproval of the proposal. Please take into account the date you plan to submit the proposal in accordance with the next SBOE meeting.	July 19, 2023
10.6	Indicate the date the program is targeting for SACSCOC approval (if applicable).	July 31, 2023
10.7	Indicate the date the program is targeting initial teacher preparation program approval (if applicable).	Not Applicable
10.8	Indicate the targeted date that upper-division courses are to begin.	May 01, 2024

FACILITIES AND EQUIPMENT SPECIFIC TO PROGRAM AREA
11.1 Describe the existing facilities and equipment that the students in the program will utilize.
Teaching and hands-on learning will be enhanced by the existing facilities, equipment, and artificial intelligence technologies offered at the MDC state-of-the-art AI Center. It has multiple specialized facilities, including classrooms capable with fundamental AI technologies, advanced AI, and quantum computing, a Makers Space, a Design Thinking and Robotics Lab to ideate and create projects, and an AI Command Center with meeting rooms to engage in group discussions.

11.2 Describe the new facilities and equipment that will be needed for the program (if applicable).
Not applicable

LIBRARY AND MEDIA SPECIFIC TO PROGRAM
12.1 Describe the existing library and media resources that will be utilized for the program.
Currently, learning resources at MDC are adequate to support the program. Resources include academic journals, publications, and books. Existing faculty will be able to further enhance resources by working with MDC's Learning Resources to create institutional repositories that support learning in specific courses. No cost is included for library renovations since the electronic/digital resources will be "housed" virtually and be available college-wide.
12.2 Describe the new library and media resources that will be needed for the program (if applicable).
A budget of $5,000 per year for the first two start up years and $2,000 for the third year is being allotted to cover the costs of supplementing the existing library's electronic book holdings and maintaining subscriptions to additional electronic technology databases. Additionally, baccalaureate students will have access to MDC's Artificial Intelligence Center at no cost to them. Hence, they will be able to optimize their learning and enhance teamwork, and have access to the Center's dedicated classrooms, quantum computing labs, multi-use spaces and a designthinking room.
ACADEMIC CONTENT
13.1 List the admission requirements for the proposed baccalaureate program and describe the process for each admission pathway as reported in section 1.6, including targeted 2+2

agreements, academic GPA, test scores, fingerprints, health screenings, background checks, signed releases, and any other program requirements (as applicable).

The BS in Applied Artificial Intelligence degree program is designed to provide a seamless articulation for graduates of the Associate in Science in Applied Artificial Intelligence. Associate in Science students entering with other technology programs (Networking Services Technology, Computer Programming and Analysis, Database Administration, Business Intelligence, Computer Information Technology, Cybersecurity) may be required to enroll in up to 16 credit hours of common prerequisite courses. The program also accommodates students entering with an Associate in Arts (AA) degree and students from regionally accredited institutions, granting up to 60 semester hours.

Admissions requirements include:

- A completed Miami Dade College Admissions and Supplemental Application
- A minimum letter grade of "C" or higher in the following common prerequisite courses: ○ CAI 1603C Artificial Intelligence (AI) Thinking
  - ○ CAI 2652C Introduction to Natural Language Processing
  - ○ CAI 2651C Machine Learning Foundations ○ COP 1047C Introduction to Python Programming ○ MAC 1105 College Algebra ○ STA 2023 Statistical Methods
- An earned Associate in Science (AS) in Applied Artificial Intelligence degree, a technology-related AS degree, or an Associate in Arts degree from a regionally accredited institution. ***---OR---***
- A minimum of 60 credit hours from a regionally accredited institution with a minimum GPA of 2.5 or higher on a 4.0 scale. Coursework must include ENC 1101 English Composition I, or equivalent.

Note: *Common prerequisite courses should be earned within five years prior to admission to the baccalaureate program. If the prerequisite course credits are more than five years old, students must consult a program academic advisor.*

13.2 What is the estimated percentage of upper-division courses in the program that will be taught by faculty with a terminal degree?

MDC Technology faculty consists of 34 full-time employees, of which seven (11) have a terminal, doctoral degree. Currently, full-time faculty with a terminal degree teach 35% of upper division technology courses. As such, the estimated percentage of upper-division courses in the Artificial Intelligence baccalaureate, that will be taught by faculty with a terminal degree, is 35%. Full-time faculty represent nearly 20% of the technology discipline faculty (with an adjunct to full-time ratio of 4:1). The college supports the educational pursuit of terminal degrees for faculty interested in or in the process of completing their doctoral degree. Currently, two (2) additional full-time technology faculty members are working on their doctorate. In the current position

opening, applicants with a terminal degree will be given preference to fill these roles. In addition, MDC continues to recruit and retain adjunct faculty with experience in related industries, including those with terminal degrees. Terminal degrees, including doctoral degrees in technology, are also incentives for adjunct promotion. This strategy helps to ensure curricular and pedagogical approaches in the classroom align with current and emerging workforce needs and innovations.

13.3 What is the anticipated average student/teacher ratio for each of the first three years based on enrollment projections?

Year 1	Year 2	Year 3
15:1	20:1	25:1

13.4 What specialized program accreditation will be sought, if applicable? What is the anticipated specialized program accreditation date, if applicable?

Not applicable

13.5 If there are similar programs listed in the Common Prerequisites Manual (CPM), list the established common prerequisites courses by CIP code (and track, if any).

No other programs in Applied Artificial Intelligence under CIP 11.0102 are currently offered.

13.6 Describe any proposed revisions to the established common prerequisites for this CIP (and track, if any).

☐ My institution does not anticipate proposing revisions to the common prerequisite manual.

☒ My institution does anticipate proposing revisions to the common prerequisite manual, as summarized below.

New to Common Prerequisite Manual
Program Name: Applied Artificial Intelligence
Degree Type: Bachelor of Science (BS)
CIP Code: 11.0102 - Artificial Intelligence
Program Hours: 120
Program Prerequisites:

- CAI 1603C Artificial Intelligence (AI) Thinking (3.0 hours) Or
  CAP 2650 Introduction to Artificial Intelligence (3.0 hours)
- CAI 2652C Introduction to Natural Language Processing (3.0 hours)

- CAI 2651C Machine Learning Foundations (3.0 hours)
- COP 1047C Introduction to Python Programming (4.0 hours) Or
  COP XXXX Computer Programming (3.0 – 4.0 hours)
  Note: COP XXXX should be a course in Python Programming language.

- MAC 1105 College Algebra (3.0 hours)
- STA 2023 Statistical Methods (3.0 hours)
  Or
  STA 2122 Statistics for Behavioral and Social Sciences I (3.0 hours) Or
  STA 2014 Descriptive and Inferential Statistics (3.0 hours) Or
  STA 2037 Statistics with Calculus (3.0 hours)

13.7 The Excel spreadsheets below are set up with predefined formulas. To activate the spreadsheet, right click within the spreadsheet, go to “Worksheet Object”, and then “Open”. To exit, save any changes and exit out of the spreadsheet. Alternatively, double click anywhere on the table. To exit the spreadsheet, single click anywhere outside of the table.
For each primary pathway identified in Section 1.6, list all courses required once admitted to the baccalaureate program by term, in sequence. Include credit hours per term and total credits for the program. Please note what courses fulfill general education (GE), program core (PC), elective requirements (Elec), and what courses apply to concentrations (Conc), if applicable, by including the provided abbreviations in parentheses following each course title.

13.7.1	Program of Study for Students with an A.A. Degree		
Term 1	**Course Title**		**Credit Hours**
CAI 3643C	Natural Language Processing	PC	3
CAI 3821C	Computational Methods and Applications for Artificial Intelligence 1	PC	3
COP 2800	Java Programming	PC	4
PHI 2680	Artificial Intelligence and Ethics	PC	3
	Total Term Credit Hours		13
Term 2	**Course Title**		**Credit Hours**
CAI 2450C	Introduction to Computer Vision	PC	3
CAI 3822C	Computational Methods and Applications for Artificial Intelligence 2	PC	3
COP 3530	Data Structures	PC	4
Elective	COP*, MAC*, MAD*, MAP*, CAP 1788, CAI 2921C, CAP 2761C, CAP 3321C, CAP 4744, CGS 1540C, CIS 3368, CTS 1120, CTS 1145, ETS 1063C, GEB 1432, MAD 1100	Elec	3
	Total Term Credit Hours		13
Term 3	**Course Title**		**Credit Hours**
CAI 4505C	Artificial Intelligence	PC	3
CAP 3330 ***or*** STA 3164	Programming R for Statistics ***or*** Statistical Methods II	PC	4
Elective	COP*, MAC*, MAD*, MAP*, CAP 1788, CAI 2921C, CAP 2761C, CAP 3321C, CAP 4744, CGS 1540C, CIS 3368, CTS 1120, CTS 1145, ETS 1063C, GEB 1432, MAD 1100	Elec	3
	Total Term Credit Hours		10
Term 4	**Course Title**		**Credit Hours**
CAI 4510C	Machine Intelligence	PC	3
CAI 4830C	Simulation for Applied Artificial Intelligence	PC	3
CAI 4420C	Applied Decision and Optimization Theory	PC	3
Elective	COP*, MAC*, MAD*, MAP*, CAP 1788, CAI 2921C, CAP 2761C, CAP 3321C, CAP 4744, CGS 1540C, CIS 3368, CTS 1120, CTS 1145, ETS 1063C, GEB 1432, MAD 1100	Elec	3
	Total Term Credit Hours		12
Term 5	**Course Title**		**Credit Hours**
CAI 4656C	Artificial Intelligence Systems Automation	PC	3
CAI 4950C	Artificial Intelligence Capstone	PC	3
Elective	COP*, MAC*, MAD*, MAP*, CAP 1788, CAI 2921C, CAP 2761C, CAP 3321C, CAP 4744, CGS 1540C, CIS 3368, CTS 1120, CTS 1145, ETS 1063C, GEB 1432, MAD 1100	Elec	3

Elective	COP*, MAC*, MAD*, MAP*, CAP 1788, CAI 2921C, CAP 2761C, CAP 3321C, CAP 4744, CGS 1540C, CIS 3368, CTS 1120, CTS 1145, ETS 1063C, GEB 1432, MAD 1100	Elec	3
	Total Term Credit Hours		12
	Program Total Credit Hours		60

13.7.2	**Program of Study for Students with A.S./A.A.S. Degree**		
Term 1	**Course Title**		**Credit Hours**
CAI 3643C	Natural Language Processing	PC	3
CAI 3821C	Computational Methods and Applications for AI 1	PC	3
COP 2800	Java Programming	PC	4
ENC 1102	English Composition 2	GE	3
	Total Term Credit Hours		13
Term 2	**Course Title**		**Credit Hours**
CAI 3822C	Computational Methods and Applications for AI 2	PC	3
COP 3530	Data Structures	PC	4
Humanities	MDC Core: ARC 2701, ARC 2702, ARH 1000, ARH 2050, ARH 2051, ARH 2740, DAN 2100, DAN 2130, HUM 1020, IND 1100, IND 1130, LIT 2000, LIT 2120, MUH 2111, MUH 2112, MUL 1010, MUL 2380, PHI 2010, PHI 2604, THE 2000	GE	3
Oral Communications	ENC 2300, LIT 2480, SPC 1017, SPC 2608	GE	3
	Total Term Credit Hours		13
Term 3	**Course Title**		**Credit Hours**
CAI 4505C	Artificial Intelligence	PC	3
CAP 3330 ***or*** STA 3164	Programming R for Statistics ***or*** Statistical Methods II	PC	4
Elective	COP*, MAC*, MAD*, MAP*, CAP 1788, CAI 2921C, CAP 2761C, CAP 3321C, CAP 4744, CGS 1540C, CIS 3368, CTS 1120, CTS 1145, ETS 1063C, GEB 1432, MAD 1100	Elec	3
	Total Term Credit Hours		10
Term 4	**Course Title**		**Credit Hours**
CAI 4510C	Machine Intelligence	PC	3
CAI 4830C	Simulation for Applied Artificial Intelligence	PC	3
CAI 4420C	Applied Decision and Optimization Theory	PC	3
Social Sciences	MDC Core: AMH 2010, AMH 2020, ANT 2000, ANT 2410, CLP 1006, DEP 2000, ECO 2013, ISS 1120, ISS 1161, POS 2041, PSY 2012, SYG 2000, WHO 2012, WHO 2022	GE	3
	Total Term Credit Hours		12
Term 5	**Course Title**		**Credit Hours**
CAI 4656C	Artificial Intelligence Systems Automation	PC	3

CAI 4950C	Artificial Intelligence Capstone	PC	3
Natural Sciences	MDC Core: AST 1002, BOT 1010, BSC 1005, BSC 1030, BSC 1050, BSC 1084, BSC 2010, BSC 2020, BSC 2085, BSC 2250, ESC 1000, EVR 1001, HUN 1201, OCB 1010, PCB 2033, PSC 1121, PSC 1515, ZOO 1010, CHM*, GLY*, MET*, OCE*, PHY*	GE	3
Elective	COP*, MAC*, MAD*, MAP*, CAP 1788, CAI 2921C, CAP 2761C, CAP 3321C, CAP 4744, CGS 1540C, CIS 3368, CTS 1120, CTS 1145, ETS 1063C, GEB 1432, MAD 1100	Elec	3
	Total Term Credit Hours		12
	Program Total Credit Hours		60

Note: The above sequence guide is intended for students who enter the program with the AS in Applied Artificial Intelligence. Students entering with this AS will have completed 21 credits of general education coursework (15 credits from the general education core and 6 credits of additional general education coursework (CGS 1060C and STA 2023) that are part of the program core).

13.8 Indicate whether the program is being proposed as a limited or restricted access program.

☐Limited Access
☐Restricted Access
☒N/A

Provide additional information (e.g., enrollment capacity, admissions requirements, etc.) if the program is being proposed as a limited or restricted access program.

Click or tap here to enter text.

PROGRAM TERMINATION

14.1 Provide a plan of action if the program is terminated in the future, including teach-out alternatives for students.

As mandated by the State Board of Education, Miami Dade College will demonstrate diligence to individual needs in the event of program termination and will enact an approved degree completion plan to enable eligible students to complete the appropriate BS degree program coursework following the termination decision to include transition services, “teach-out” options, and options for students to complete with other area institutions.

SUPPLEMENTAL MATERIALS

15.1 Summarize any supporting documents included with the proposal, such as meeting minutes, survey results, letters of support, and other supporting artifacts. Throughout the proposal, please include in-text references to the supplemental materials for reviewer reference.

Appendix A – MDC's Artificial Intelligence Business and Industry Leadership Team Agenda and Meeting Notes Appendix B – Artificial Intelligence Committee Meeting Minutes Appendix C – Proposed Common Pre-Requisites Manual Application Appendix D – Program Sheet Appendix E – Letters of Support Appendix F – Notification to Local Institutions
15.2 List any objections or alternative proposals for this program received from other postsecondary institutions. If objections or alternative proposals were received, institutions are welcome to submit a rebuttal and include any necessary supporting documentation.
No objections or alternative proposals were extended.

Appendix Table of Contents

Appendix A – MDC's Artificial Intelligence Business and Industry Leadership Team Agenda and Meeting Notes

Meeting Minutes

Attendees:

Aaron Burciaga, Co-Founder & Board Member, DataPrime
Achille Ettorre, Advisor/Consultant, Ettorre & Associates
Beverly Wright, Chairperson, Analytics Certification Board
Brett Fraser, Senior Vice President, DataPrime
Craig Brabec, Vice President, Chief Data Analytics Officer, McDonald's
Jordan Morrow, Vice President, Dataskills
John Elder, Founder/Chair, Elder Research
Kinga Parrott, AI Strategy Principal, IBM
Kirk Borne, Chief Science Officer, DataPrime
Mani Janakiram, Sr. Director/Sr. Principal AI Engineer, Intel
Manuj Aggarwal, Advisor/Consultant, TetraNoodle
Matthew McCarville, Vice President, Education and Data Strategy, MTX Group
Melissa Moore, Board Member, DataPrime
Noelle Silver, AI and Analytics Executive, IBM
Pete Martinez, Chairman & CEO , SIVOTEC
Radhika Kulkarni, President, INFORMS
Robin Lougee, Associate Vice President, Advanced Analytics, Ascena
Roy Lowrance, Advisor/Consultant
Ann Beheler, Advisor/Consultant/Ann Beheler LLC

MDC Team
Antonio Delgado
Manny Perez
Anselm Knights
Monica Minchala
Anabel Mederos
Prof. George Gabb
Prof. Sergio Cobo
Prof. Eduardo Salcedo
Prof. Joseph Weathers
Prof. Norge Pena
Prof. Rodolfo Cruz

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AI BILT Kick-off Meeting

Location: BIT Center/Virtual also
Date: February 23, 2022
Time: 2:30-4:00 pm

Meeting Agenda – AI BILT Kickoff – February 23, 2022

Item 1:	**Welcome and Introduction of BILT Members**
2:30 - 2:50 pm	*Dean Manuel Perez, School of Engineering, Technology & Design* *Aaron Burciaga, Chair of Global Analytics Certification Board, Senior Practice Manager, US Federal Partner Professional Services at Amazon Web Services (AWS)CEO Dataprime.AI* *Ann Beheler, MDC AI BILT and Curriculum facilitator*
Item 2: 2:50-3:00 am	**Introduction of Miami Dade College AI Team Faculty** *Ann Beheler*
Item 3: 3:00-3:15 pm	**Setting the context for the AI Baccalaureate Degree** *Dean Manuel Perez*
Item 4: 3:25-3:30 pm	**Details about what is meant by a BILT and how it is different** *Aaron Burciaga* *Ann Beheler*
Item 5: 3:30-3:40 pm	**What is a KSA BILT meeting and how BILT members participate in that meeting** *Ann Beheler*
Item 6: 3:40-3:50 pm	**Timeline for 2022 AI BILT core meetings for 2022; Optional opportunities** *Ann Beheler*
Item 7: 3:40-4:00	**Q&A** *All*

Agenda Item 1: Welcome and Introduction

Discussion:
All attendees introduced themselves and briefly mentioned their background with respect to AI and data analytic

Conclusions:

All attendees were able to see how qualified the BILT members are.

Agenda Item 2: Introduction of AI Faculty

Discussion:
Ann Beheler introduced all six AI Faculty on the project as well as other staff

Conclusions:
Not applicable

Agenda Item 3: Setting the Context for the AI Degrees

Discussion:
Dean Perez covered the background and plans for the AI BS, AS and CCCs

Conclusions:
Not application – purpose was to inform the BILT team

Agenda Item 4: Details of the BILT and how it is different

Discussion:
Ann Beheler and Aaron Burciaga covered slides explaining the difference between a standard Business Advisory Committee (BAC)and a BILT. Essentially, a BILT is an advisory committee that asks and gets co-leadership, rather than just advisory. See attached slides.

Conclusions:
Not applicable – purpose was to inform the BILT team

Agenda Item 5: What is a KSA BILT meeting and how BILT members participate in that meeting

Discussion:
Ann Beheler explained that the next AI BILT meeting would ask the BILT members to vote on a list of pro forma Knowledge and Skills that the BILT members believe would be required of workforce ready graduates 24-48 month into the future. She explained that each BILT member will vote electronically on a scale that indicates how important each item is to making the graduate workforce ready. Then, the group will hold a synchronous discuss regarding the results, including the average of each item, the distribution of the votes, and also changes and additions that are needed. Faculty will use the prioritized Knowledge and Skills plus the analyzed discussion to create a draft curriculum

Conclusions:
Not applicable – purpose was to inform the BILT team

Agenda Item 6: Timeline for 2022 AI BILT core meetings for 2022; Optional opportunities

Discussion:
Ann Beheler explained that the next meeting would be held in late March, likely March 25, and it would be a 2-hours meeting to cover the actual KSA voting as well as the discussion. BILT members were invited to come to Miami to participate face-to-face although they were also advised that there would be a Zoom option. They were advised there would be one or two feedback Q&A sessions with faculty and BILT members, and tentative time periods were given without

commitment that those time periods would work. Ann advised that the timing of the next meetings would be dependent on how long the faculty ultimately needs to develop the draft curriculum outlines and competencies.

Conclusions:
Not applicable – purpose was to inform the BILT team

Agenda Item 7: Q&A

Discussion:
Ann Beheler, Aaron, and Dean Perez answered BILT member questions. BILT members also indicated their interest in helping.

Conclusions:
BILT members agreed to participate in the KSA meeting in March, 2022

Action Items	Owner(s)	Deadline	Status
Hold KSA meeting	Ann Beheler/Aaron Burciaga	March 25, 2022	Preparation of pro forma KSAs will be ready no later than March 20 so that the KSA voting meeting can be held March 25.

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Location: AI Center, North Campus
Date: 3-25-22
Time: 10:00 am – 12:30 pm

AI BILT Meeting Minutes

Convener: Dean Manuel Perez

Attendees: Virtual attendees: AI BILT: Summer Fowler, Kinga Parrott, Scott Nestler, Achille Ettore, Radhika Kulkarni, Peter Martinez, Matt McCarville, Kirk Borne, Mani Janakiram, Tyler Roth, Manuj Aggarwal, Brett Fraser, John Elder, Lance Kallman.

Virtual attendees: MDC Faculty: Norge Pena-Perez (faculty), Rodolfo Cruz (faculty), Sergio Cobo (faculty), George Gabb (faculty), Joseph Weathers (faculty)

In-person attendees: AI BILT Members: Ann Beheler, (Facilitator), Aaron Burciaga, Roy Lowrance, Beverly Wright, John Salmanson

In-person attendees from MDC administrators and staff: Anselm Knights, Antonio Delgado, Manuel Perez, Monica Minchala, Anabel Mederos-Corratge,

In-person attendees from MDC AI Faculty: Eduardo Salcedo

AGENDA

AI BILT Meeting for Knowledge and Skills Prioritization

10:00 am – 12:30 pm
March 25, 2022
BIT Center
Zoom link: https://mdc-edu.zoom.us/j/85875762041

I. Welcome

II. Preview of electronic voting on pro forma Knowledge and Skills

III. Electronic Voting

IV. Discussion of the vote

Location: AI Center, North Campus
Date: 3-25-22
Time: 10:00 am – 12:30 pm

V. Special presentations from recruiters and an AI BILT member regarding what they are seeking today for new hires doing AI work

VI. Next Steps

VII. Adjournment on or before 12:30 pm

Agenda Item 1: Welcome

Discussion: All in attendance introduced themselves to set the stage for the later discussion

Conclusions: Not applicable

Agenda Item 2: Preview of Electronic Voting Form

Discussion: Facilitator Ann Beheler presented an overview of the BILT, including the voting process for BILT members to use in prioritizing the Knowledge and Skills that workforce ready AI graduates need to possess.

Conclusions: Questions were answered so that BILT members knew how the voting process works.

Agenda Item 3: Electronic Vote

Discussion: All BILT members voted using the electronic link provided by facilitator, Ann Beheler

Conclusions: Pro forma Knowledge and Skills for AI were prioritized in preparation for synchronous discussion

Agenda Item 4: Discussion of the Vote

Discussion: Led by Ann Beheler, facilitator and inventor of the BILT model and Aaron Burciaga, Chairman of the AI BILT, the results of the vote were discussed. Highlights are below:

Aaron explained that the list came from multiple lists and that BILT members could add, change, or clarify anything on the list. Ann and Aaron merged lists to about 300 items, and they negotiated this as a starting point because working from a pro forma list makes more efficient use of BILT members' time.

Ann explained that any BILT member or faculty member can ask for discussion on any item; she indicated that she would ask about any item showing an average of 2.6 or less because historically items with an average under 2.6 are likely not going to be included. She also said that items with votes in all 4 'numbers' would also generally be discussed.

Members meticulously went through each KSA, exchanging ideas, defining items, and deciding whether it was a knowledge or skill.

Facilitator Ann Beheler then asked the BILT what is missing from the list:

Beverly Wright suggested adding automation of models, and the other BILT members concurred.

Josh Salmanson suggested adding digital twins and simulation, Kirk Borne agreed. – Kirk and Josh said they were very important.

Josh Salmanson suggested teaching the difference between complex systems and complicated systems because we can predict behavior in complicated system but usually not a complex system. Systems thinking part of this program. Kirk Borne agreed.

Pete Martinez wanted to ensure that the history of AI and what problems have been enabled now due to AI will be covered with an emphasis on the key building blocks, architecture, tools and application.

Other items suggested for inclusion: Cobots and models in production

Conclusions: The discussion will also affect the prioritized Knowledge and Skills that will be used for cuticulum creation.

Agenda Item 5: **Special presentations from recruiters and an AI BILT member regarding what they are seeking today for new hires doing AI work**

Discussion: Lance Kalman and Tyler Florence, both recruiters, explained what they are seeing with respect to hiring of AI workers. Questions were asked and answered.

Conclusions: Both faculty and BILT members were made aware of the current needs.

Agenda Item 6: **Next Steps**

Discussion: Ann Beheler, facilitator, explained that MDC faculty will take the prioritized KSA list as well as the items added to use in formulating course patterns for credentials: two college credit certificates, an AS degree, and a BS degree. All credentials will be responsive to the prioritized Knowledge and Skills from the vote and discussion. She explained that it is likely that faculty will have further questions prior to completion of this work. Upon completion, the faculty will meet with the AI BILT members again to explain the credentials created and the courses created and how they cover the Knowledge and Skills prioritized by the BILT.

Conclusions: At least one feedback meeting will be held prior to submission of the credentials to the state, and various BILT members will be asked for assistance along the way, as appropriate.

Location: AI Center, North Campus
Date: 3-25-22
Time: 10:00 am – 12:30 pm

Action Items	Owner(s)	Deadline	Status
KSAs were created	Ann Beheler	3-25-2022	Complete
Combine prioritized KSAs and discussion comments	Ann Beheler	4-15-2022	In process
Cross reference to curriculum	Faculty/Ann Beheler and Monica Minchala	As soon as possible	To be started

Meeting Minutes

Attendees: Virtual attendees: John Elder, Scott Nestler, Achille Ettore, Peter Martinez, Roy Lowrance, Matt McCarville, Manchon U (Kevin)

In-person attendees: AI BILT Members: Ann Beheler, (Facilitator), Aaron Burciaga, Kinga Parrott, Manuj Aggrawal, Noelle Silver, Melissa Moore, Lance Kallman, Jennifer Ally Kearn, Jordan Morrow, Beverly Wright.

In-person attendees from MDC administrators and staff: VP Antonio Delgado, Dean Manuel Perez, Monica Minchala, Anabel Mederos Corratge,

In-person attendees from MDC AI Faculty: George Gabb, Sergio Cobo, Joseph Weathers, Norge Pena-Perez, Rodolfo Cruz

AGENDA

AI BILT Meeting for Knowledge and Skills Prioritization

2:30-4:00
September 20, 2022
New AI Center at North Campus

1. Key collaborators
2. BILT overview
3. Summary of AI BILT work this Spring/Summer
4. Summary of the BILT KSA voting process
5. Overview of the work with faculty including questions
6. AS course sequence and BS course list
7. Next Steps

Agenda Item 1: Introduction of Key Collaborators

Discussion: All in attendance introduced themselves to set the stage for the later discussion

Conclusions: Not applicable

Location: AI Center, North Campus
Date: 9-20-22
Time: 2:30-4:00

Agenda Item 2: BILT Overview

Discussion: Facilitator Ann Beheler presented and overview of the BILT process as there were new BILT members in attendance

Conclusions: Not applicable

Agenda Item 3: Summary of BILT/Faculty Work in Spring and Summer 2022

Discussion: A summary of work accomplished to date was presented to set the stage for a detailed discussion of what faculty have done with the prioritized Knowledge and Skills they identified in March using the BILT process.

Conclusions: Not applicable

Agenda Item 4: Summary of BILT KSA voting process

Discussion: A summary of KSA voting process and work accomplished at the 3-25 AI BILT meeting was presented to set the stage for further discussion

Conclusions: Not applicable

Agenda Item 5: Overview of work with MDC Faculty in Spring/Summer 2022

Discussion: A summary of the process faculty used to cross reference the prioritized knowledge and skills the BILT identified on 3-25 was presented along with what the faculty did to determine and develop the competencies for new courses.

Conclusions: Not applicable

Agenda Item 6: Discussion with the BILT regarding Questions

Faculty and BILT members went through KSAs that needed clarification. BILT offered feedback and clarified need for certain skills and knowledge.

Conclusions: Changes were made in the K and S list, and faculty agreed to address concerns.

Agenda Item 6: AS and BS draft curriculum were presented for comment

Discussion: The Director of Program Development presented the course sequence guide form for MDC, showing pathways for the two CCC's and the AS. She also presented a draft of the course list for the BS degree. The BILT agreed they thought the courses for the CCC's and the AS were appropriate overall.

The BILT had a lengthy discussion about ensuring that the students have experience in communication prior to graduation. Several BILT members expressed that the students

should develop communication skills in projects included in several courses along the way in both the AS and BS curriculum.

Several BILT members were pleased that the BS includes a second statistics course. And, several BILT members asked faculty about how much hands-on is involved in the classes. Professor Gabb stated that there is significant hands-on in even the beginning courses, and presentations are a part of both the AS and BS capstone courses. The BILT members all strongly encouraged more presentation experience throughout to develop student skills.

After covering the BS courses, the focus shifted to the Math needed for the AI program. Several were concerned that there are too many traditional theoretical math courses in the program that cover extra topics not needed for Applied AI work.

One BILT member specifically questioned the inclusion of a Java course. VP Delgado advised that Java was a prerequisite for Data Structures, which is needed in the Bachelor's program

Conclusions: Faculty agreed to review and address the suggestions made by the BILT.

Agenda Item 7: Next Steps

Discussion: **Mr. Burciaga as chairman asked if the group of BILT members supported what they had seen, and all but one did support the plans presented. That person was still concerned about the BS having too many standard theoretical math courses and asked that faculty consider an alternative approach to provide the Math. Another BILT member agreed that having too much standard theoretical math in the program would keep women, in particular, from enrolling.**

The meeting closed with Ann Beheler stating that there would be a follow-up meeting to go over the changes with the BILT and to also prioritize the employability skills such as communication skills that the BILT members want to see in qualified graduates.

Conclusions: Faculty agreed to review options for providing Math for Applied AI students.

Location: AI Center, North Campus
Date: 9-20-22
Time: 2:30-4:00

Action Items	Owner(s)	Deadline	Status
Schedule next meeting	Ann Beheler	By Spring 2023	To be done

Appendix B – Artificial Intelligence Committee Meeting Minutes

Artificial Intelligence Curriculum Meeting | June 9, 2022

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Meeting Minutes

Artificial Intelligence Curriculum Meeting

June 9, 2022 @9:00 am MDC North Campus/Zoom

Program/Area:	School of Engineering, Technology and Design/AI Discipline Committee
Meeting Purpose:	AI Curricula Development
Meeting Date:	06/09/2022
Meeting Time:	9:00 AM – 5:00 PM
Meeting Location:	via Zoom
Committee Convener:	Professor George Gabb
Attendees:	Noelle Silver, (AI Advisory Committee) Partner, AI & Analytics at IBM, Microsoft MVP in AI. Antonio Delgado, Vice President of Innovation and Technology Partnerships Miami Dade College Manny Perez, Dean of EnTec & Design, Miami Dade College Anselm Knights, Chairperson, School of Engineering and Technology, Miami Dade College Monica Minchala, Director of Program Development EnTec & Design, Miami Dade College Anabel Mederos, Grant Manager, School of Engineering and Technology, Miami Dade College Ann Beheler, AI BILT and Curriculum Facilitator Prof. Sergio Cobo, Faculty, Miami Dade College Prof. Eduardo Salcedo, Faculty, Miami Dade College Prof. Joseph Weathers, Faculty, Miami Dade College Prof. Norge Pena, Faculty, Miami Dade College Prof. Rodolfo Cruz, Faculty, Miami Dade College
Minutes Issued By:	Anabel Mederos

Agenda Item 1: AI Applications Solutions course

Discussion:

- Attendees discussed certain KSA's defined by the BILT members and matched them with the competencies that AI Applications Solutions course should contain.
- Noelle Silver explained that the AI Solutions course should have certain models. She recommended certain industry models, so students might have a chance to build a project. She highlighted what is important to get the data set from the beginning to the point where students are actually serving that model to end users, meaning applications and measuring.

Conclusions:

- Noelle Silver advised that this course should be a last semester course for the AS where students can build a model from start to end: Codifying problem and metrics ®Data collection

1 | Page

and cleaning ° Feature engineering ° Model training and tuning ° Model validation ° Model deployment ° Monitoring validation

- Noelle Silver highlighted depth or level that students should have experienced leading to building a model, at least one time.
- Noelle Silver explained why the machine learning life cycle should be covered in depth in the Bachelor's degree.
- Faculty agreed that they are willing to review the competencies in the course and fill the gap with more applications than theoretical concepts.
- Faculty agreed that AI Application Solutions should be that kind of course that ties everything together and it will be a sort of repetition of this model at a higher level for upper division courses.

Agenda Item 2: Upper-Level courses (Applied Simulation/Automation/Applied Decision-Optimization Theory)

Discussion:

- Faculty discussed books and materials to be used in the upper-level courses. Materials should be focused on open-sources.
- Digital Twins and Simulation (using not any logic).
- Foundational models to be taught during the Bachelor's degree.
- Pre-requisites for the upper-level courses.

Conclusions:

- Noelle Silver exposed that the Simulation course must have some discussions around the nuance of industry alignment.
- Faculty went through the competencies and matched the new AI courses, making sure top skills highlighted by the BILT were not missed.
- Noelle Silver explained what "Identifying Data requirements" means for the industry. This skill ranked the highest score in the voting process by the BILT members.
- Faculty agreed to develop a program (Applications of AI) aligned with the workforce perspective.
- Faculty agreed to send out a survey to the BILT for them to vote on the level(s) of Math they expect in a graduate.
- Faculty decided to delay the AI BILT feedback meeting that was scheduled for June 24, to allow more time for the survey to be sent out and the results to be collected.

Meeting Notes:

Ann and Monica conveyed a concerted opinion about whether a Bachelor's degree in AI would draw individuals, particularly those who typically wouldn't consider computer science, to the field.

Ann explained the cross-reference file that is color-coded. Red indicator means the subject needs a supplemental book to cover these topics. Towards the top, the file shows exactly what KSAs are under the 2.61 cutoff and do not have to be considered which ones we mapped to existing courses as possibilities (though coverage may not be enough or too few KSAs are covered by a given class to use it), and those that ranked high enough that we need to cover in some way though they are not covered now. The Additions from the BILT are still at the bottom regardless of coverage.

Action Items	Owner(s)	Deadline	Status
Review remaining KSAs and competencies	Faculty	June 10	In Progress

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Meeting Minutes

Artificial Intelligence Curriculum Meeting

June 10, 2022 @9:00 am MDC North Campus/Zoom

Program/Area:	School of Engineering, Technology and Design/AI Discipline Committee
Meeting Purpose:	AI Curricula Development
Meeting Date:	06/10/2022
Meeting Time:	9:00 AM – 5:00 PM
Meeting Location:	MDC North Campus /via Zoom
Committee Convener:	Prof. George Gabb, Faculty, Miami Dade College
Attendees:	Aaron Burciaga, (AI Advisory Committee), Chair of Global Analytics Certification Board, Senior Practice Manager, US Federal Partner Professional Services at Amazon Web Services (AWS). Antonio Delgado, Vice President of Innovation and Technology Partnerships Miami Dade College Manny Perez, Dean of EnTec & Design, Miami Dade College Anselm Knights, Chairperson, School of Engineering and Technology, Miami Dade College Monica Minchala, Director of Program Development EnTec & Design, Miami Dade College Anabel Mederos, Grant Manager, School of Engineering and Technology, Miami Dade College Ann Beheler, AI BILT and Curriculum Facilitator Prof. Sergio Cobo, Faculty, Miami Dade College Prof. Eduardo Salcedo, Faculty, Miami Dade College Prof. Joseph Weathers, Faculty, Miami Dade College Prof. Norge Pena, Faculty, Miami Dade College Prof. Rodolfo Cruz, Faculty, Miami Dade College
Minutes Issued By:	Anabel Mederos

Agenda Item 1: Summarize previous Workshop/Meeting conducted on June 9

Discussion:

- Ann Beheler summarized the main points analyzed during the meeting conducted the day before. She emphasized the significant progress in formulating the AI courses.

Conclusions: Not applicable

Agenda Item 2: Course competencies mapping to KSAs-Upper Division

Discussion:

- Faculty discussed competencies and matched the new AI courses.

- Faculty exchanged knowledge and perspectives regarding Math courses to be included in the Bachelor's degree in AI.
- Faculty discussed KSAs and levels of classification (Exposure, Skilled) for each skill highlighted by the BILT members.

Conclusions:

- Prof. George Gabb explained that students will learn to build models in the AI Applications class.
- Faculty agreed that even when the industry is focused on the low code/no code approach, students must know how to deploy. Students do not need to be developers, but they must have the knowledge.
- Aaron Burciaga expressed that BILT members will be reviewing the appropriate term (Exposure, Skilled) for each skill described in the KSAs.
- Faculty agreed on specific skills recommended by the industry such as Queuing, Digital Twins and Simulation.

Agenda Item 3: Robotics course (current course at MDC)

Discussion:

- Review the existing Robotics course at MDC and evaluate if it should be included or not in the courses listed for the Bachelor's degree.
- Monica Minchala expressed that including Robotics means adding 3 more pre-requisites courses.

Conclusions:

- Consider revising Robotics pre-requisites and continue to explore the need for Automation VS Robotics.

Agenda Item 4: Math Courses to include in the Bachelors 'degree

Discussion:

- Faculty expressed their concern related to the level of Math to be included in the AI program.
- Consideration was given to including Algebra track courses all the way to Calculus 2.
- Main concern was the amount of credit-hours to be included in the BS vs utilizing credit-hours to offer more applied AI courses.

Conclusions:

- Faculty agreed to do a more thorough review of the level of Math needed by the industry.

Agenda Item 5: Mapping to KSAs-Upper Division

Discussion:

- Aaron Burciaga explained the skill *"Persona Design and Creation for Applications"* in terms of the industry.
- Prof. George Gabb agreed students will get Exposure to this skill in the AI Thinking course and Skilled in the Capstone course.

- Faculty went through each KSA to acquire a better understanding of how each skill translates to curriculum.
- Faculty inquired to Aaron Burciaga (Business perspective) about skills recommended by the BILT members.

Conclusions:

- Faculty agreed on the different levels of classification (Exposure, Skilled) for each skill highlighted by the BILT members. For example, Knowledge of Natural Language Generation is present in 3 different courses.
- Ann Beheler proposed to evaluate skills under 3.0, in case it is a knowledge that faculty would like to include in the courses.

Meeting Notes:

Faculty decided to delay the AI BILT feedback meeting that was scheduled for June 24, to allow more time for the survey to be sent out and the results to be collected.

Action Items	Owner(s)	Deadline	Status
Send out a survey to the BILT for them to vote on the level(s) of Math they expect in a graduate.	Ann Beheler	June 24	In Progress

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Meeting Minutes (Summary)

Artificial Intelligence Curriculum Meeting

November 7, 2022 @10:30 am via Microsoft Teams

November 9, 2022 @10:30 am via Microsoft Teams

November 14, 2022 @9:30 am via Microsoft Teams

November 16, 2022 @10:00 am via Microsoft Teams

Program/Area:	School of Engineering, Technology and Design/AI Discipline Committee
Meeting Purpose:	AI Curricula Development
Meeting Date:	11/07/2022; 11/09/2022; 11/14/2022; 11/16/2022
Meeting Duration:	12 hrs. (in total)
Meeting Location:	via Microsoft Teams
Committee Convener:	Prof. George Gabb, Faculty, Miami Dade College
Attendees:	Monica Minchala, Director of Program Development EnTec & Design, Miami Dade College Anabel Mederos, Grant Manager, School of Engineering and Technology, Miami Dade College Ann Beheler, MDC AI BILT and Curriculum Facilitator Prof. Sergio Cobo, Faculty, Miami Dade College Prof. Eduardo Salcedo, Faculty, Miami Dade College Prof. Joseph Weathers, Faculty, Miami Dade College Prof. Norge Pena, Faculty, Miami Dade College Prof. Rodolfo Cruz, Faculty, Miami Dade College
Minutes Issued By:	Anabel Mederos

During November 2022, MDC faculty hosted 4 meetings (12 hours in total) to discuss and get consensus regarding the Upper Division courses in AI in preparation for submission of the BS application.

Highlights:

- Faculty finalized KSA's prioritized by the AI BILT to the curriculum mapping matrix to ensure coverage.
- Faculty unanimously approved competencies for the AI courses through a voting motion.
- Faculty discussed and unanimously approved the Program Sheet for the BS in Applied AI.
- Faculty discussed program common prerequisites (admissions).
- Faculty unanimously approved General Education Requirements.
- Faculty reviewed and unanimously approved the Course Sequence guide for the BS in Applied AI.

Upper Division courses in AI

1. Artificial Intelligence
   - Faculty discussed and approved course name; course description; credit hours; requisites and competencies ensuring continuous alignment with KSAs.
   - Faculty discussed and approved college-wide learning outcomes per competency, adding competencies to college form.

2. Machine Intelligence
   - Faculty discussed and approved course name; course description; credit hours; requisites and competencies ensuring continuous alignment with KSAs.
   - Faculty discussed and approved college-wide learning outcomes per competency, adding competencies to college form.

3. Natural Language Processing
   - Faculty discussed and approved course name; course description; credit hours; requisites and competencies ensuring continuous alignment with KSAs.
   - Faculty discussed and approved college-wide learning outcomes per competency, adding competencies to college form.

4. Simulation for Applied AI
   - Faculty discussed and approved course name; course description; credit hours; requisites and competencies ensuring continuous alignment with KSAs.
   - Faculty discussed and approved college-wide learning outcomes per competency, adding competencies to college form.

5. AI Systems Automation
   - Faculty discussed and approved course name; course description; credit hours; requisites and competencies ensuring continuous alignment with KSAs.
   - Faculty discussed and approved college-wide learning outcomes per competency, adding competencies to college form.

6. Applied Decision and Optimization Theory
   - Faculty discussed and approved course name; course description; credit hours; requisites and competencies ensuring continuous alignment with KSAs.
   - Faculty discussed and approved college-wide learning outcomes per competency, adding competencies to college form.

7. AI Capstone
   - Faculty discussed and approved course name; course description; credit hours; requisites and competencies ensuring continuous alignment with KSAs.
   - Faculty discussed and approved college-wide learning outcomes per competency, adding competencies to college form.

Action Items	Owner(s)	Deadline	Status
Discuss and agree on the Program Learning Outcomes for the AI courses.	MDC Faculty	November 18	N/A

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Meeting Minutes

Artificial Intelligence Curriculum Meeting

November 18, 2022 @11:00 am via Teams

Program/Area:	School of Engineering, Technology and Design/AI Discipline Committee
Meeting Purpose:	AI Curricula Development
Meeting Date:	11/18/2022
Meeting Time:	11:00 AM – 1:00 PM
Meeting Location:	via Teams
Committee Convener:	Prof. George Gabb, Faculty, Miami Dade College
Attendees:	Monica Minchala, Director of Program Development EnTec & Design, Miami Dade College Anabel Mederos, Grant Manager, School of Engineering and Technology, Miami Dade College Ann Beheler, MDC AI BILT and Curriculum Facilitator Prof. Sergio Cobo, Faculty, Miami Dade College Prof. Eduardo Salcedo, Faculty, Miami Dade College Prof. Joseph Weathers, Faculty, Miami Dade College Prof. Norge Pena, Faculty, Miami Dade College Prof. Rodolfo Cruz, Faculty, Miami Dade College
Minutes Issued By:	Anabel Mederos

Agenda Item 1: Pending items in the Checklist (AI Bachelor's degree)

Discussion:

- Monica Minchala and faculty summarized main points to cover during the meeting.
- Faculty agreed to be focused on the Program Learning outcomes during the meeting.

Conclusions:

- Faculty agreed to be satisfied with KSA Upper Division discussed in the previous meetings.

Agenda Item 2: Program Learning Outcomes (PLOs)

Discussion:

- Reviewed the PLOs for the Associate Degree in Applied AI.
- Prof. Rodolfo Cruz explained how the PLOs document should be filled out.

Conclusions:

- Faculty discussed and agreed on the Program Learning Outcomes for the AI courses.
- Faculty members agreed that these PLOs should be measured on a scale of Introduced, Reinforced, and Solidified.

Agenda Item 3: Voting Motion

Discussion:

- Faculty voted for the Program Learning Outcomes discussed during the meeting.

Conclusions:

- Faculty agreed on the terminology for determining the PLOs.
- Faculty unanimously approved the 5 Program Learning Outcomes for the AI courses through a voting motion.

Meeting Notes:

All items in the checklist pending to be completed by Faculty were completed.

Appendix C – Proposed Common Pre-Requisites Manual Application

Common Prerequisites Manual (CPM) Revision Request

Institution:	Miami Dade College
Institution Liaison:	Dr. Alicia Giovinazzo
Date of Submission:	Click or tap here to enter text.
Program/Degree Type:	Applied Artificial Intelligence/Bachelor of Science
Program CIP Code:	11.0102 - Artificial Intelligence
Program Credit Hours:	120

If applicable, please complete the following if you are notifying us of a change to:

Program Credit Hours:	Current Credit Hours: Click or tap here to enter text. New Credit Hours: Click or tap here to enter text. Effective Date: Click or tap here to enter text.
Limited Access Program Status:	☐ Change from open access to limited access ☐ Change from limited access to open access Effective Date: Click or tap here to enter text.
Program CIP Code:	Current CIP code: Click or tap here to enter text. New CIP Code: Click or tap here to enter text. Effective Date: Click or tap here to enter text.

Baccalaureate Program Status:	☐ Notification of a Program Termination – Term/Year Program Should be Removed from the CPM: Click or tap here to enter text. ☒ Notification of New Program – Anticipated Program Implementation Date: 08/01/2023 ☐ Notification of Program Name Change – Revised Program Name: Click or tap here to enter text.

Proposed Revisions(s) to the CPM (check all that apply)

The CIP Code Is Currently in the CPM:

☐ 1. Make curriculum changes to an existing track at proposing institution

☐ 2. Add program to a current track without curriculum changes

☐ 3. Add program to a current track with curriculum changes

☐ 4. Establish a new track without prerequisites

☐ 5. Establish a new track with prerequisites

6. For numbers 1-5, please provide track information below:

a. ☐ Track 1 ☐ Track 2 ☐ Track 3 ☐ Track 4 ☐ Track 5 ☐ Track 6

b. Track Name: Click or tap here to enter text.

c. If this is a request to establish a new track, please provide justification as to why a new track is needed: Click or tap here to enter text.

The CIP Code Is Not Currently in the CPM:

☐ 7. Add program to the CPM without prerequisites ☒

8. Add program to the CPM with prerequisites

Proposed Curriculum Actions:

☒ Add course(s) and/or course alternative(s)

☐ Eliminate course(s) and/or course alternative(s) (delete course from the CPM)

☐ Exempt course(s) and/or course alternative(s) (request exception from course)

☐ Carry over prerequisites from previous CIP without changes (CIP Code change) ☐ Carry over prerequisites from previous CIP with changes (CIP Code change)

☐ Other – please specify Click or tap here to enter text.

Please include the following supporting documentation with this proposal:

- The program page from the Common Prerequisite Manual, if applicable.
- The program requirements for the baccalaureate degree program at your institution.

If this request is for any of the following, do not complete anything further:

- Add program to a current track without curriculum changes
- Establish a new track without prerequisites
- Add program to the CPM without prerequisites

If this request is for any of the following, please complete 1-8, where applicable:

- Make curriculum changes to an existing track at proposing institution
- Carry over prerequisites from previous CIP with no changes
- Carry over prerequisites from previous CIP with changes
- Add program to a current track with curriculum changes
- Establish a new track with prerequisites
- Add program to the CPM with prerequisites

1. **For required prerequisite course(s) and/or course alternative(s), please list the following information for each course (add rows if necessary).**

Course Prefix and Number	Course Title	Course Alternative	Justification for Course(s)	Credits
CAI 1603C	Artificial Intelligence (AI) Thinking	CAP 2650	CAI 1603C and its alternative offer the necessary foundation in artificial intelligence concepts and learning models used for predictions. This foundational course serves as a prerequisite for CAI 2651C (below) and additionally supports success in upper division coursework.	3

CAI 2651C	Machine Learning Fundamentals	Click or tap here to enter text.	Students are introduced to machine learning concepts and Python applications, including data acquisition, supervised, unsupervised, and reinforced learning. In addition, students will develop and deploy artificial intelligence (AI) models utilizing classification algorithms. This foundational course is needed to prepare students for CAI 2652C (below) and forms a strong foundation for the upper division.	3
CAI 2652C	Introduction to Natural Language Processing	Click or tap here to enter text.	In this course students learn the fundamental concepts of Natural Language Processing (NLP), text processing, and tools used to create a language recognition application. This course offers prerequisite knowledge for upper division NLP course.	3
COP 1047C	Introduction to Python Programming	COP XXXX Note: COP XXXX should be a course in Python Programming language.	COP 1047C prepares students to code, compile, and execute programs in the Python programming language, which is widely used for artificial intelligence. Upon completion of this course, students are better prepared to use AI tools—a skill needed for upper division coursework. Students will have the option to transfer any COPXXXX that is focused on introductory programming or higher in the Python language.	4

MAC 1105	College Algebra	higher-level algebra-track mathematics	Algebra offers students foundational knowledge of mathematical operations that include linear, quadratic, logarithmic, radical and absolute value functions and their graph, properties of logarithms, systems of equations, operations on functions and applications and modeling. A foundation in algebra is required for several upper division courses in the baccalaureate.	3
STA 2023	Statistical Methods	STA 2122, STA 2014, STA 2037	STA 2023 and its alternative courses introduce students to statistical methods. Students will learn topics to include collecting, grouping and presenting; measures of central tendency and dispersion; probability; testing hypotheses; confidence intervals; and correlation. A foundation in statistical analysis is required for several upper division courses in the baccalaureate.	3
			Total Credits	**19**

2. **If the course(s) above includes a course(s) that is offered currently at three or fewer FCS or SUS institutions, please provide justification as to why the course is critical for a student's success in the baccalaureate degree program. Please visit the Statewide Course Numbering System to determine the number of institutions that offer the course(s) (add rows if necessary). Click here for instructions on how to navigate the SCNS.**

Course(s) Offered at 3 or Less FCS/SUS Institutions	Number of FCS Institutions Currently Offering Course (out of 28)	Number of SUS Institutions Currently Offering Course (out of 12)	Justification for Course(s)

CAI 1603C	1	1	CAI 1603C and its alternative offer the necessary foundation in artificial intelligence concepts and learning models used for predictions. This foundational course serves as a prerequisite for CAI 2651C (below) and additionally supports success in upper division coursework.
CAI 2651C	2	0	Students are introduced to machine learning concepts and Python applications, including data acquisition, supervised, unsupervised, and reinforced learning. In addition, students will develop and deploy artificial intelligence (AI) models utilizing classification algorithms. This foundational course is needed to prepare students for CAI 2652C (below) and
			forms a strong foundation for the upper division, including course CAI 3821C Computational Methods and Applications for Artificial Intelligence 1.
CAI 2652C	2	0	In this course students learn the fundamental concepts of Natural Language Processing (NLP), text processing, and tools used to create a language recognition application. This course offers prerequisite knowledge for students to succeed in upper division NLP course allowing them to transition to deep learning applications.

COP1047C	3	0	This course prepares students to code, compile, and execute programs in the Python programming language. This dynamic program is widely used for artificial intelligence and is an integral tool to prepare students for upper division coursework. Upon completion of this course, students are better prepared to learn to explore various types of AI tools and applications. Students will have the option to transfer any COPXXXX that is focused on introductory programming or higher in the Python language. Currently, Python programming is taught in multiple classes at the state level, including: COPX030, COPX034, COPX035, COPX040, COPX043, COPX044, COPX045, COPX046, COPX047, COPX049, COPX283, COPX284, COPX375, COPX376, COPX410.

3. If the request includes courses that are offered only at your institution, explain what options are available to students at other institutions for completing the required courses (add rows if necessary).

Course(s) Offered Only at Proposing Institution	Option(s) at Other Institutions	Explanation of Option(s)
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.
Click or tap here to enter text.	Click or tap here to enter text.	Click or tap here to enter text.

4. **If the request includes exemption from or elimination of a prerequisite course(s) and/or course alternative(s), please list the following information for each course that you would like to be exempt from or eliminate (add rows if necessary).**

Course Prefix and Number	Course Title	Justification for Course Elimination/Exemption
Click or tap here to enter text.	Click or tap here to enter text.	☐ Exempt from Course ☐ Elimination of Course Click or tap here to enter text.

Click or tap here to enter text.	Click or tap here to enter text.	☐ Exempt from Course ☐ Elimination of Course Click or tap here to enter text.
Click or tap here to enter text.	Click or tap here to enter text.	☐ Exempt from Course ☐ Elimination of Course Click or tap here to enter text.

5. **Please provide the college level prerequisite(s) for the common prerequisite course(s) if applicable (add rows if necessary).**

Course Prefix	**College Level Prerequisites**	**Credits**
MAC 1105 **Common**	Prerequisite: MAT1033	**Hours**3
STA 2023	Prerequisite: MAT1033 or MGF1106	3
	Total Credits	3

6. **Please provide the information requested below for the review of common prerequisite completion within 60 credit hours.**

Number of Credit Hours for AA degree	**60**
Subtract the number of credit hours required for common prerequisites	- 19
Subtract the number of credit hours of college-level course prerequisites for common prerequisite courses (if known)	- 3
Add the number of credit hours for common prerequisites that are also general education core requirements	+ 6
Total Credits remaining to complete the rest of the student's general education requirements	= 44

7. If a student does not have enough room in the "Total Credits" above to complete the rest of the general education requirements, please provide justification for requiring more common prerequisite course credit hours than can be accommodated by the student in 60 credit hours.

Not applicable.

8. Other.

Click or tap here to enter text.

Miami Dade College

Program Name: Applied Artificial Intelligence

Degree Type: Bachelor of Science (BS)

CIP Code: 11.0102 - Artificial Intelligence

Program Hours: 120

Admissions Requirements:

- A completed Miami Dade College Admissions and Supplemental Application
- A minimum letter grade of "C" or higher in the following common prerequisite courses:
  - CAI 1603C Artificial Intelligence (AI) Thinking (3.0 hours)
    Or
    CAP 2650 Introduction to Artificial Intelligence (3.0 hours) ○ CAI 2651C Machine Learning Fundamentals (3.0 hours) ○ CAI 2652C Introduction to Natural Language Processing (3.0 hours) ○ COP 1047C Introduction to Python Programming (4.0 hours)
    Or
    COP XXXX Computer Programming (3.0 – 4.0 hours)
    Note: COP XXXX should be a course in Python Programming language. ○ MAC 1105 College Algebra (3.0 hours) ○ STA 2023 Statistical Methods (3.0 hours)
    Or
    STA 2122 Statistics for Behavioral and Social Sciences I (3.0 hours) *Or*
    STA 2014 Descriptive and Inferential Statistics (3.0 hours) *Or*
    STA 2037 Statistics with Calculus (3.0 hours)
- An earned Associate in Science (AS) in Applied Artificial Intelligence degree, a technology related AS degree, or an Associate in Arts degree from a regionally accredited institution. ***---OR---***

  A minimum of 60 credit hours from a regionally accredited institution with a minimum GPA of 2.5 or higher on a 4.0 scale. Coursework must include ENC 1101 English Composition I, or equivalent.

Note: *Common prerequisites courses should be earned within five years prior to admission to the baccalaureate program. If the prerequisite course credits are more than five years old, students must consult an academic advisor.*

Miami Dade College

Program Name: Applied Artificial Intelligence

Degree Type: Bachelor of Science (BS)
CIP Code: 11.0102 - Artificial Intelligence
Program Hours: 120

Program Prerequisites:

- **Requirement:** CAI 1603C Artificial Intelligence (AI) Thinking (3.0 hours)
  Or
  Alternative: CAP 2650 Introduction to Artificial Intelligence (3.0 hours)

- **Requirement:** CAI 2651C Machine Learning Fundamentals (3.0 hours)

- **Requirement:** CAI 2652C Introduction to Natural Language Processing (3.0 hours)

- **Requirement:** COP 1047C Introduction to Python Programming (4.0 hours)
  Or
  Alternative: COP XXXX Computer Programming (3.0 – 4.0 hours)
  Note: COP XXXX should be a course in Python Programming language.

- **Requirement:** MAC 1105 College Algebra (3.0 hours)

- **Requirement:** STA 2023 Statistical Methods (3.0 hours)
  Or
  Alternative: STA 2122 Statistics for Behavioral and Social Sciences I (3.0 hours) *Or*
  Alternative: STA 2014 Descriptive and Inferential Statistics (3.0 hours) *Or*
  Alternative: STA 2037 Statistics with Calculus (3.0 hours)

Appendix D – Program Sheet

Miami Dade College

Applied Artificial Intelligence (CIP TBA)
Bachelor of Science | Code: XXXXX | 120 credits
Effective Term: Fall 2023 (2307)

The Bachelor of Science (BS) degree in Applied Artificial Intelligence (AI) offers a practical approach to using complex fields such as computer vision, natural language processing, and machine learning to transform large datasets into actionable outputs that can be used to increase productivity and operational efficiencies. The program is well-rounded and tailored to meet employers' needs, offering in-depth knowledge of artificial intelligence (AI) tools and their applications, as well as AI process automation and optimization. In addition, students learn to use ethical standards and socially responsible practices in the design and implementation of AI systems.

GENERAL EDUCATION REQUIREMENTS – 36 Credits Required
Courses require a grade of "C" or higher to satisfy the general education requirement.

		Credits	Requisites
1. Communications – 6 Credits Required			
ENC 1101	English Composition 1 (Gw)	3	Appropriate college placement
ENC 1102	English Composition 2 (Gw)	3	Pre-Req ENC 1101
2. Oral Communications – 3 Credits Required			
Select one course from the following offerings.			
ENC 2300	Advanced Composition & Communication (Gw)	3	Pre-Req ENC 1101, 1102
LIT 2480	Issues in Literature & Culture (Gw)	3	Pre-Req ENC 1102
SPC 1017	Fundamentals of Speech Communications (Gw)	3	
SPC 2608	Introduction to Public Speaking (Gw)	3	
3. Humanities – 6 Credits Required			
Select one course from Group A-State Core AND one course from Group B-MDC Core. At least one Gordon Rule Writing (Gw) course must be selected from Group A or Group B.			
Group A: State Core (3 credits)			
ARH 1000	Art Appreciation	3	
HUM 1020	Introduction to Humanities	3	
LIT 2000	Introduction to Literature (Gw)	3	Pre-Req ENC 1101
MUL 1010	Music Appreciation	3	
PHI 2010	Introduction to Philosophy (Gw)	3	Pre-Req ENC 1101
THE 2000	Theatre Appreciation (Gw)	3	
---AND---			
Group B: MDC Core (3 credits)			
ARC 2701	History of Architecture 1	3	
ARC 2702	History of Architecture 2 (Gw)	3	
ARH 1000	Art Appreciation	3	
ARH 2050	Art History 1	3	
ARH 2051	Art History 2 (Gw)	3	Pre-Req ARH 2050
ARH 2740	Cinema Appreciation (Gw)	3	
DAN 2100	Dance Appreciation	3	
DAN 2130	Dance History 1 (Gw)	3	
HUM 1020	Introduction to Humanities	3	
IND 1100	History of Interiors 1	3	
IND 1130	History of Interiors 2 (Gw)	3	
LIT 2000	Introduction to Literature (Gw)	3	Pre-Req ENC 1101
LIT 2120	A Survey of World Literature 2 (Gw)	3	Pre-Req ENC 1101, 1102
MUH 2111	Survey of Music History 1	3	
MUH 2112	Survey of Music History 2 (Gw)	3	Pre-Req MUH 2111
MUL 1010	Music Appreciation	3	
MUL 2380	Jazz & Popular Music in America (Gw)	3	
PHI 2010	Introduction to Philosophy (Gw)	3	Pre-Req ENC 1101
PHI 2604	Critical Thinking/Ethics (Gw)	3	Pre-Req ENC 1101
THE 2000	Theatre Appreciation (Gw)	3	

4. Social Sciences – 6 Credits Required

Select one course from Group A-State Core AND one course from Group B-MDC Core. To meet the Civic Literacy Competency Requirement for graduation **one course selection must be AMH 2020 or POS 2041**.

Group A: State Core (3 credits)

AMH 2020	**History of the US Since 1877**	**3**
ANT 2000	Introduction to Anthropology	3
ECO 2013	Principles of Economics (Macro) (Gw)	3
POS 2041	**American Federal Government**	**3**
PSY 2012	Introduction to Psychology	3
SYG 2000	Introduction to Sociology	3

---AND---

Group B: MDC Core (3 credits)

AMH 2010	History of the US to 1877	3
AMH 2020	**History of the US Since 1877**	**3**
ANT 2000	Introduction to Anthropology	3
ANT 2410	Introduction to Cultural Anthropology	3
CLP 1006	Psychology of Personal Effectiveness	3
DEP2000	Human Growth and Development	3
ECO 2013	Principles of Economics (Macro) (Gw)	3
ISS 1120	The Social Environment	3
ISS 1161	The Individual in Society	3
POS 2041	**American Federal Government**	**3**
PSY 2012	Introduction to Psychology	3
SYG 2000	Introduction to Sociology	3
WOH 2012	History of World Civilization to 1789	3
WOH 2022	History of World Civilization from 1789	3

5. Natural Sciences – 6 Credits Required

Select one course from Group A-State Core AND one course from Group B-MDC Core.

Group A: State Core (3 credits)

AST 1002	Descriptive Astronomy	3	
BSC 1005	General Education Biology	3	
BSC 2010	Principles of Biology	3	Pre/Co-Req CHM 1045/BSC 2010L
BSC 2085	Human Anatomy and Physiology 1	3	Co-Req BSC 2085L
CHM 1020	General Education Chemistry	3	
CHM 1045	General Chemistry and Qualitative Analysis	3	Pre/Co-Req CHM1025 & MAC1105/CHM1045L
ESC 1000	General Education Earth Science	3	
EVR 1001	Introduction to Environmental Science	3	
PHY 1020	General Education Physics	3	
PHY 2048	Physics with Calculus 1	4	Pre/Co-Req HS physics, or PHY1025 or 2053, or dept. approval, and MAC2311/PHY2048L
PHY 2053	Physics (without Calculus) 1	3	Pre/Co-Req MAC1147, 1114, 1140/PHY2053L

---AND---

Group B: MDC Core (3 credits)

AST 1002	Descriptive Astronomy	3	
BOT 1010	Botany	3	Co-Req BOT 1010L
BSC 1005	General Education Biology	3	
BSC 1030	Social Issues in Biology	3	
BSC 1050	Biology & Environment	3	
BSC 1084	Functional Human Anatomy	3	
BSC 2010	Principles of Biology	3	Pre/Co-Req CHM 1045/BSC 2010L
BSC 2020	Human Biology: Fund. of Anatomy & Physiology	3	
BSC 2085	Human Anatomy and Physiology 1	3	Co-Req BSC 2085L
BSC 2250	Natural History of South Florida	3	
ESC 1000	General Education Earth Science	3	
EVR 1001	Introduction to Environmental Sciences	3	
HUN 1201	Essentials of Human Nutrition	3	
OCB 1010	Introduction to Marine Biology	3	
PCB 2033	Introduction to Ecology	3	Pre-Req PSC 1515 or BSC 2011
PSC 1121	General Education Physical Science	3	Pre-Req MAT 1033
PSC 1515	Energy in the Natural Environment	3	
ZOO 1010	Zoology	3	Co-Req ZOO 1010L
CHM*, GLY*, MET*, OCE*, PHY*			

6. Mathematics – 6 Credits Required

MAC 1105 may be replaced by a higher-level mathematics with prefix MAC*, MAS*, or MAP*. All courses accepted in this section fulfill the Gordon Rule Computation (Gc) graduation requirements.

MAC 1105	College Algebra (Gc)	3	Pre-Req MAT 1033
STA 2023	Statistical Methods (Gc)	3	Pre-Req MAT 1033 or MGF 1106

7. General Education Elective – 3 Credits Required
See Academic Advisor for approved selection.

Computer Competency Requirement
Students must satisfy the requirement by successfully completing a course (CGS1060C or CTS0050, an equivalent college credit course), or passing MDC's Computer Skills Placement examination, or a test exemption.

Foreign Language Competency Requirement
Students must fulfill this requirement via three options:
Option A: Successful completion of two (2) credits (i.e., the equivalent of two years) in one (1) foreign language at the secondary (high school) level.

---OR---

Option B: Successful completion of the following courses at the elementary 2 level: ASL 1150C, CHI 1121, FRE 1121, GER 1121, ITA 1121, JPN 1121, POR 1121, RUS 1121, SPN 1121. These credits count towards the Lower Division Requirements area.

---OR---

Option C: Students may demonstrate completion of the elementary 2 level through standardized examination that document the required foreign language competency.

LOWER DIVISION TECHNOLOGY – 31 Credits Required

Group A: *13 credits*

CAI 1603C	Artificial Intelligence (AI) Thinking	3	
CAI 2651C	Machine Learning Foundations	3	Prerequisite: CAI 1603C. COP1047C is strongly recommended, but not required.
CAI 2652C	Introduction to Natural Language Processing	3	Prerequisite: CAI 2651C
COP 1047C	Introduction to Python Programming	4	

Group B: *10 credits*

CAI 2450C	Introduction to Computer Vision	3	Prerequisite: CAI 2651C
COP 2800	Java Programming	4	Prerequisite: COP 1334, COP 1047C, or COP 2270
PHI 2680	Artificial Intelligence and Ethics	3	

Group C: 8 credits
Any transferrable credit

UPPER DIVISION REQUIREMENTS – 35 Credits Required

Program Core**:** *31 credits*

CAI 3643C	Natural Language Processing	3	Prerequisite: CAI 2652C
CAI 3821C	Computational Methods and Applications for Artificial Intelligence 1	3	Prerequisites: CAI 2651C, COP 1047C, MAC 1105, and STA 2023
CAI 3822C	Computational Methods and Applications for Artificial Intelligence 2	3	Prerequisite: CAI 3821C
CAI 4420C	Applied Decision and Optimization Theory	3	Prerequisite: CAI 4505C
CAI 4505C	Artificial Intelligence	3	Prerequisites: CAI 3822C and COP 3530
CAI 4510C	Machine Intelligence	3	Prerequisites: CAI 3822C and COP 3530
CAI 4656C	Artificial Intelligence Systems Automation	3	Prerequisites: CAI 4505C and CAP 4510C
CAI 4830C	Simulation for Applied Artificial Intelligence	3	Prerequisite: CAP 4505C
CAI 4950C	Artificial Intelligence Capstone	3	Prerequisites: CAI 4510C, CAI 4420C, and CAI 4830C. Pre/Corequisite: CAI 4656C
COP 3530	Data Structures	4	Prerequisite: COP 2800

Upper-Division Statistics: *4 credits*
Select one course from the following offerings.

CAP 3330	Programming R for Statistics	4	Prerequisite: STA 2023
STA 3164	Statistical Methods II	4	Prerequisite: STA 2023

PROGRAM ELECTIVES – 18 Credits Required
Electives are restricted to courses listed below:
COP*, MAC*, MAD*, MAP*

CAI 2921C	Artificial Intelligence Applications Solutions	3	Prerequisites: CAI 2450C and CAI 2652C
CAP 1788	Introduction to Data Analytics	4	
CAP 2761C	SQL for Data Analytics	4	Prerequisite: CGS 1540C
CAP 3321C	Data Wrangling	4	Prerequisite: CAP 1788 and CAP 2761C
CAP 4744	Data Visualization	4	Prerequisite: CAP 1788 and CAP 2761C
CGS 1540C	Database Concepts and Design	4	
CIS 3368	Data Security & Governance	4	
CTS 1120	Cybersecurity Fundamentals	4	

CTS 1145	Cloud Essentials	4	
ETS 1063C	Introduction to Robotics	4	
GEB 1432	Applied Artificial Intelligence (AI) in Business	3	
MAD 1100	Discrete Mathematics for Computer Science	3	Prerequisite: MAC 1105

IMPORTANT INFORMATION

Civic Literacy Competency: To earn a baccalaureate, students first entering the Florida College System or State University System in the 2021-2022 school year and thereafter must demonstrate competency in civic literacy. This requirement may be satisfied by passing AMH 2020 or POS 2041 (listed under the Social Sciences core) AND passing an approved assessment. Civic literacy requirements vary for students who entered the College or University system prior to academic year 2021-22. Please see the Testing and Assessment Department for examinations and guidelines.

Computer Competency: All MDC degree-seeking students with 16 or more credits must demonstrate computer competency prior to graduation. Students demonstrate this competency by passing the MDC computer competency test, currently known as CSP (Computer Skills Placement) examination or by enrolling in and successfully completing an equivalent course.

Foreign Language: Students admitted to the baccalaureate degree program without meeting the foreign language admissions requirement of at least 2 courses (8-10 credit hours) of sequential foreign language at the secondary level or the equivalent of such instruction at the postsecondary level must earn such credits prior to graduation.

Required Credit Hours and GPA: The baccalaureate requires student to earn a minimum of 120 unduplicated credit hours with a minimum cumulative grade point average of 2.0. All general education and all upper division requirements must be passed with the grade of "C" or better.

Pursuing or Have Earned an Associate's Degree: Students entering with an AS or AAS degree may have more than 24 elective credits and may need additional General Education credits to meet the 36 General Education credits required for the baccalaureate degree. Students entering with an AA degree may need additional electives to provide appropriate background for the baccalaureate program.

Graduation Requirements: Additional requirements may apply, which include, but are not limited to Gordon Rule (college level communication and computational skills) and residency (number of credits that must be earned at MDC). Students should review their individualized Degree Audit Report to determine the specific graduation policies in effect for their program of study for the year and term they entered Miami Dade College. Students are highly encouraged to meet with their academic advisor on a regular basis and review the College Catalog to learn about all requirements to receive the baccalaureate. The final responsibility for meeting graduation requirements rests with the student.

Program Learning Outcomes: Graduates of Miami Dade College's BS in Applied Artificial Intelligence program will be able to:

1. Describe and utilize AI system development methods, environments, and tools.
2. Analyze, assess, and address the social and ethical implication in AI systems development.
3. Design, develop, and deploy an AI model.
4. Apply computational thinking to solving real world problems that address business needs.
5. Identify, acquire and transform datasets for automated systems solutions.

Appendix E – Letters of Support

Florida International University

FIU | FLORIDA INTERNATIONAL UNIVERSITY

September 30, 2022

Madeline Pumariega
President
Miami Dade College
300 N.E. Second Avenue
Miami, Florida 33132-2297

Dear President Pumariega:

I have recently been informed of Miami Dade College's interest in providing a valuable four-year degree offering to the South Florida community: the Bachelor of Science degree in Applied Artificial Intelligence (AI).

I am pleased to know that the college continues to further this mission and its efforts by providing workforce education to our students and expanding hands-on, job relevant courses to meet the needs of our community.

I fully support the Applied AI degree proposal.

I look forward to working with Miami Dade College to ensure your students have opportunities to continue onto Florida International University graduate programs.

Sincerely,

Elizabeth M. Bejar, Ph.D.
Interim Provost, Executive Vice President, and Chief Operating Officer

Florida International University | 11200 S.W. 8th Street | Miami, FL 33199 | 305-348-2151 | www.fiu.edu

COLLEGE OF ENGINEERING & COMPUTER SCIENCE
Mihaela Cardei, Ph.D., Associate Dean for Graduate Studies
777 Glades Road, EE 308N
Boca Raton, FL 33431
561.297.3459, fax: 561.297.1111
mcardei@fau.edu
eng.fau.edu

September 30, 2022

Madeline Pumariega
President
Miami Dade College
300 N.E. Second Avenue
Miami, Florida 33132-2297

Dear President Pumariega:

I have recently been informed of Miami Dade College's interest in providing a valuable four-year degree offering to the South Florida community: the Bachelor of Science degree in Applied Artificial Intelligence (AI).

I am pleased to know that the college continues to further this mission and its efforts by providing workforce education to students and expanding hands-on, job relevant courses to meet the needs of our community.

I fully support the Applied AI degree proposal.

Sincerely,

MCardei

Mihaela Cardei, PhD
Associate Dean for Graduate Studies and Professor
College of Engineering and Computer Science
Florida Atlantic University
561-297-3459

UF UNIVERSITY of FLORIDA

Herbert Wertheim College of Engineering
Office of the Dean

300 Weil Hall
PO Box 116550
Gainesville, FL 32611-6550
352-392-6000
352-392-9673 Fax

October 5, 2022

Madeline Pumariega
President
Miami Dade College
300 N.E. Second Avenue
Miami, Florida 33132-2297

Dear President Pumariega:

I have recently been informed of Miami Dade College's interest in providing a valuable four-year degree offering to the South Florida community: the Bachelor of Science degree in Applied Artificial Intelligence (AI).

I am pleased to know that your institution continues to fulfill your mission by providing workforce education to UF students and expanding hands-on, job relevant courses to meet the needs of our community.

We at the University of Florida's Herbert Wertheim College of Engineering are committed to advancing AI education throughout the state of Florida to meet the emerging, and rapidly growing, needs of industry.

I fully support the proposed Applied AI degree proposal and look forward to working with Miami Dade to advance educational opportunities for Florida's citizens in this critical area.

Sincerely,

Cammy R. Abernathy
Dean
UF Herbert Wertheim College of Engineering

University of Colorado Denver
CU IN THE CITY

November 14, 2022

Dr. Madeline Pumariega
President, Miami Dade College
200 NE Second Ave.
Miami, FL 33132

Dear Dr. Pumariega,

I am providing this letter to confirm my full support for the **Applied Artificial Intelligence Bachelor of Science Degree** being developed by Miami Dade College. The program addresses an emerging technology area that is seriously needed by business and industry, and it will provide access to high-paying and interesting careers for graduates.

As an Artificial Intelligence leader, I have worked with the Miami Dade College EnTec faculty and staff in a rigorous, methodical process to align this program with the knowledge and skills that business and industry need in graduates in the near future. In my work, I have become acutely aware of the growing need for talent with the skills and knowledge that will be taught in this program. I am very excited about the gap that this program will fill and the incredible impact it will have on establishing a more diverse and inclusive workforce.

I strongly support your submitting the program to the State of Florida as soon as possible so that students can begin enrolling and graduating to help fill the need for their skills.

Best regards,

Matthew McCarville DBA, MBA, MS-BIA, MSc-PM, CSM
Assistant Vice Chancellor (CIO)
Office of Information Technology
Adjunct Professor-MBA Economics
University of Colorado Denver
President and CEO, Optimize Consulting Group
Board of Directors, CyberandPrivacy.com, WonUp.app, Let'sHelp.Health and QuoteCorrect.com
Pronouns: He, Him, His
Cell/Text: 402-669-6069 | Matthew.McCarville@ucdenver.edu

DATAPRIME

BLBL DATAPRIME

October 5, 2022

To
Dr. Madeline Pumariega
President, Miami Dade College
300 N. E. Second Avenue
Miami, FL 33132-2297

Dear Dr. Pumariega,

I am delighted to confirm my support for Miami Dade College's (MDC) 120-semester-hour Bachelor's degree in Applied Artificial Intelligence. The degree has been created with co-leadership by approximately 18 Artificial Intelligence experts who are on the Business & Industry Leadership Team (BILT) over the last six months.

As Chairman and Co-founder of DataPrime, it is my pleasure to be the chair the meetings of the Business & Industry Leadership Team that is advising MDC on the artificial intelligence knowledge and skills we expect to require of right-skilled workers in the future.

Because Artificial Intelligence is a field that is frequently in the news, we expect this BS degree to be of interest to many students. Many incumbent workers are also likely to need to know artificial intelligence concepts; therefore, the degree or portions of it will doubtless be of interest to them as well.

I strongly suggest that MDC complete full development of this BS degree and apply to the State of Florida for approval as soon as possible.

Sincerely,

Aaron D Burciaga
Chairman, DataPrime

703-399-1903 • dataprime.ai • aaron@dataprime.ai • 880 Harrison St, Leesburg VA 20175

DATAPRIME

December 1, 2022

Dr. Madeline Pumariega
President, Miami Dade College
200 NE Second Ave.
Miami, FL 33132

Dear Dr. Pumariega,

I am providing this letter to confirm my full support for the **Applied Artificial Intelligence Bachelor of Science Degree** being developed by Miami Dade College. The program addresses an emerging technology area that is seriously needed by business and industry, and it will provide access to high-paying and interesting careers for graduates.

As an Artificial Intelligence leader, I have worked with the Miami Dade College EnTec faculty and staff in a rigorous, methodical process to align this program with the knowledge and skills that business and industry need in graduates in the near future. In my work, I have become acutely aware of the growing need for talent with the skills and knowledge that will be taught in this program. I am very excited about the gap that this program will fill and the incredible impact it will have on establishing a more diverse and inclusive workforce.

I strongly support your submitting the program to the State of Florida as soon as possible so that students can begin enrolling and graduating to help fill the need for their skills.

Best regards,

Kirk D Borne

Kirk D. Borne, Ph.D.
Chief Science Officer
DataPrime Inc.
https://prime.ai/

Elder Research, Inc.

ELDER RESEARCH
DATA SCIENCE • MACHINE LEARNING • AI

December 1, 2022

Dr. Madeline Pumariega
President, Miami Dade College
200 NE Second Ave.
Miami, FL 33132

Dear Dr. Pumariega,

I am providing this letter to confirm my full support for the **Applied Artificial Intelligence BS Degree** being developed by Miami Dade College. The program addresses an emerging technology area that is seriously needed by business and industry, and it will provide access to high-paying and interesting careers for graduates.

As an Artificial Intelligence leader, I have worked with the Miami Dade College EnTec faculty and staff in a rigorous process to align this program with the knowledge and skills that business and industry need in graduates now and in the near future. As founder of a leading Data Science, AI, and Machine Learning consultancy, I have become acutely aware of the ever-growing need for talented people with the skills and knowledge that will be taught in this program. I am very excited that this program will fill a gap and have a big impact on establishing a more diverse and inclusive workforce.

I strongly support your submitting the program to the State of Florida as soon as possible so that students can begin enrolling and graduating to help fill the need for their skills.

Best regards,

John F, Elder IV, PhD
Founder & Chair
Elder Research, Inc.
www.elderresearch.com

HEADQUARTERS
300 West Main St. Suite 301
Charlottesville, VA 22903

PHONE: 434.973.7673
FAX: 434.973.7673
www.elderresearch.com

OTHER LOCATIONS:
Washington, DC | Baltimore, MD
Raleigh, NC | London, UK

IBM

IBM US
1 Alhambra Plaza, Unit 1415
Coral Gables, Fl 33134

November 28, 2022

Dr. Madeline Pumariega
President, Miami Dade College
200 NE Second Ave.
Miami, FL 33132

Dear Dr. Pumariega,

I am providing this letter to confirm my full support for the Applied Artificial Intelligence Bachelor of Science Degree being developed by Miami Dade College. The program addresses an emerging technology area that is seriously needed by business and industry, and it will provide access to high-paying and interesting careers for graduates.

As an Artificial Intelligence leader, I have worked with the Miami Dade College EnTec faculty and staff in a rigorous, methodical process to align this program with the knowledge and skills that business and industry need in graduates in the near future. In my work, I have become acutely aware of the growing need for talent with the skills and knowledge that will be taught in this program. I am very excited about the gap that this program will fill and the incredible impact it will have on establishing a more diverse and inclusive workforce.

I strongly support your submitting the program to the State of Florida as soon as possible so that students can begin enrolling and graduating to help fill the need for their skills.

Best regards,

Kinga Parrott
Business Technology Leader, AI Strategy
IBM US

December 1, 2022

To: Dr. Madeline Pumariega
President, Miami Dade College (MDC)
300 NE Second Ave. Miami, FL 33132

RE: Support for MDC Bachelor of Science in Applied Artificial Intelligence

I understand MDC is submitting a proposal to start a Bachelor of Science in Applied Artificial Intelligence to fill the ever-expanding gap of AI talent pipeline. As an AI professional at Intel, I believe what MDC is doing is commendable and would help address the huge gap in AI, Analytics and Data fluency. We are experiencing exponential growth of data and analytics in the industry and lack of talent to effectively leverage AI tools for productivity gains and doing good with AI.

I am a Sr. Director of Supply Chain Strategy & Analytics at Intel Corporation and an Adjunct Faculty at Arizona State University. Based on my years of years both in the industry and academia, I believe we need more of these programs to educate and provide a healthy pipeline of AI talent and continuous learning of AI to solve pressing challenges. I believe this will help the industry and the students whose lives will be so much improved and will also enable a better data-centric world.

In summary, I commend MDC for initiating the Associate in Science for Applied Artificial Intelligence and fully support it. Please contact me if you have any questions.

Sincerely,

Mani Janakiram, PhD
Sr. Director, Global Supply Chain
Intel Corporation
Mani.janakiram@intel.com

Intel Corporation
5000 W. Chandler Blvd.
Chandler, AZ 85226

Searchlight Partners

December 1, 2022

Dr. Madeline Pumariega
President, Miami Dade College
200 NE Second Ave.
Miami, FL 33132

Dear Dr. Pumariega,

I am providing this letter to confirm my full support for the **Applied Artificial Intelligence Bachelor of Science Degree** being developed by Miami Dade College. The program addresses an emerging technology area that is seriously needed by business and industry, and it will provide access to high-paying and interesting careers for graduates.

As an Artificial Intelligence leader, I have worked with the Miami Dade College EnTec faculty and staff in a rigorous, methodical process to align this program with the knowledge and skills that business and industry need in graduates in the near future. In my work, I have become acutely aware of the growing need for talent with the skills and knowledge that will be taught in this program. I am very excited about the gap that this program will fill and the incredible impact it will have on establishing a more diverse and inclusive workforce.

I strongly support your submitting the program to the State of Florida as soon as possible so that students can begin enrolling and graduating to help fill the need for their skills.

Best regards,

Lance Kallman
President
Searchlight Partners

Best Buy

November 14, 2022

Dr. Madeline Pumariega
President, Miami Dade College
200 NE Second Ave.
Miami, FL 33132

Dear Dr. Pumariega,

I am providing this letter to confirm my full support for the **Applied Artificial Intelligence Bachelor of Science Degree** being developed by Miami Dade College. The program addresses an emerging technology area that is seriously needed by business and industry, and it will provide access to high-paying and interesting careers for graduates.

As an Artificial Intelligence leader, I have become acutely aware of the growing need for talent with the skills and knowledge that will be taught in this program. I am very excited about the gap that this program will fill and the incredible impact it will have on establishing a more diverse and inclusive workforce.

I strongly support your submitting the program to the State of Florida as soon as possible so that students can begin enrolling and graduating to help fill the need for their skills.

Best regards,

Craig Brabec
Senior Vice President, Chief Data Analytics Officer
Best Buy

September 30, 2022

Madeline Pumariega
President, Miami Dade College
300 N. E. Second Avenue
Miami, FL 33132-2297

Dear President Pumariega,

I am writing to support the Bachelor's of Science degree in Applied Artificial Intelligence at Miami Dade College that is under development by the School of EnTec. As a member of the Business and Industry Leadership Team (BILT) that has co-led the development effort, I am proud of how the degree has come together.

I am confident that there is a great shortage of qualified people in industry to build AI systems and that AI systems will become increasingly important.

I was the non-faculty lead of a team at New York University when the provost decided to determine if NYU should develop a data science program. I drew on my background as a partner at the Boston Consulting Group and helped the team develop the data to conclude that all of the sciences would undergo another wave of innovation based on the ready availability of tools and techniques to analyze data in mass and at low cost. That forecast was used to justify building and offering several data science degrees: a masters, a doctorate, and two undergraduate majors.

The innovation in the sciences has if nothing accelerated since that study. There is corresponding unmet demand in industry. That need is definitely illustrated by the Bachelor's degree that we, as BILT members, have guided and reviewed. I helped a Miami company build a program to convert software engineers to data scientists, and that program has been commercially successful.

At NYU, we observed that UC Berkeley had developed a Data 8 course that was intended for all undergraduates. It teaches basic programming, enough to write rudimentary data manipulation and resampling statistics programs and a few machine learning techniques. I am told that the course is the most popular one on campus, with many sections running concurrently.

A version of that course is offered at NYU, where it is called "Data Science for Everyone." That course is offered to all Arts & Sciences undergraduates and has been extremely popular.

I helped the University of Miami design another Data 8-derived course called "Data Science for the World." That course has just been launched. All of these courses indicate that there is demand in both academia and industry.

Your initiative around the Bachelor of Science degree in Applied Artificial Intelligence is needed. The basic premise is that knowing to how manipulate data using a computer program has become a foundational skill for many disciplines in demand in industry and the academy. This is undoubtedly true. Your BS degree would go beyond the Data 8 foundational material and teach students how to use computers to create data-driven predictions, which is the main source of value added in industry. The

proposed BS degree will provide Miami Dade College students with many artificial intelligence skills that are in high demand by industry.

Sincerely,

Roy E Lowrance

CEO & Founder, Applied Data Science, LLC

Miami, Florida

Burtch Works

December I, 2022

Dr. Madeline Pumariega

President, Miami Dade College

200 NE Second Ave.

Miami, FL 33132

Dear Dr. Pumariega,

I am providing this letter to confirm my full support for the Applied Artificial Intelligence Bachelor's Degree being developed by Miami Dade College. The program addresses an emerging technology area that is seriously needed by business and industry, and it will provide access to high-paying and interesting careers for graduates.

As an Artificial Intelligence leader, I have worked with the Miami Dade College EnTec faculty and staff in a rigorous, methodical process to align this program with the knowledge and skills that business and industry need in graduates in the near future. In my work, I have become acutely aware of the growing need for talent with the skills and knowledge that will be taught in this program. I am very excited about the gap that this program will fill and the incredible impact it will have on establishing a more diverse and inclusive workforce.

I strongly support your submitting the program to the State of Florida as soon as possible so that students can begin enrolling and graduating to help fill the need for their skills.

Best regards,

Beverly Wright, PhD, CAP®

Head - Data Science Solutions
Burtch Works

December 1, 2022

Dr. Madeline Pumariega
President, Miami Dade College
200 NE Second Ave.
Miami, FL 33132

Dear Dr. Pumariega,

I am providing this letter to confirm my full support for the **Applied Artificial Intelligence Bachelor of Science Degree** being developed by Miami Dade College. The program addresses an emerging technology area that is seriously needed by business and industry, and it will provide access to high-paying and interesting careers for graduates.

As an Artificial Intelligence leader, I have worked with the Miami Dade College EnTec faculty and staff in a rigorous, methodical process to align this program with the knowledge and skills that business and industry need in graduates in the near future. In my work, I have become acutely aware of the growing need for talent with the skills and knowledge that will be taught in this program. I am very excited about the gap that this program will fill and the incredible impact it will have on establishing a more diverse and inclusive workforce.

I strongly support your submitting the program to the State of Florida as soon as possible so that students can begin enrolling and graduating to help fill the need for their skills.

Best regards,

Manuj Aggarwal
Founder/Chief Innovation Officer
TetraNoodle Technologies Inc.

Dr. Radhika Kulkarni

4020 Thetford Rd
Durham, NC 27707
919-413-5519
rvk9@cornell.edu

November 30, 2022

Dr. Madeline Pumariega.
President, Miami Dade College
200 NE Second Ave.
Miami, FL 33132

Dear Dr. Pumariega,

I am providing this letter to confirm my full support for the Applied Artificial Intelligence Bachelor's Degree being developed by Miami Dade College. The program addresses an emerging technology area that is seriously needed by business and industry, and it will provide access to high-paying and interesting careers for graduates.

As an Artificial Intelligence leader, I have been associated with the Miami Dade College EnTec faculty and staff in their development of a rigorous, methodical process to align this program with the knowledge and skills that business and industry need in graduates in the near future. During my years leading the R&D Division for Advanced Analytics at SAS Institute, I have worked with several Fortune 100 companies as they invested in Analytics and Artificial Intelligence projects. In my work, I have become acutely aware of the growing need for talent with the skills and knowledge that will be taught in this program at Miami Dade College. I am very excited about the gap that this program will fill and the incredible impact it will have on establishing a more diverse and inclusive workforce.

I strongly support your submitting the program to the State of Florida as soon as possible so that students can begin enrolling and graduating to help fill the need for their skills.

Best regards,

Radhika Kulkarni

Dr. Radhika Kulkarni

2022 INFORMS President

Vice President, Advanced Analytics R&D (Retired)

SAS Institute Inc., Cary, NC 27513

November 10th, 2022

Dr. Madeline Pumariega
President, Miami Dade College
200 NE Second Ave.
Miami, FL 33132

Dear Dr. Pumariega,

I am providing this letter to confirm my full support for the **Applied Artificial Intelligence Bachelor of Science Degree** being developed by Miami Dade College. The program addresses an emerging technology area that is seriously needed by business and industry, and it will provide access to high-paying and interesting careers for graduates.

As an Artificial Intelligence leader, I have worked with the Miami Dade College EnTec faculty and staff in a rigorous, methodical process to align this program with the knowledge and skills that business and industry need in graduates in the near future. In my work, I have become acutely aware of the growing need for talent with the skills and knowledge that will be taught in this program. I am very excited about the gap that this program will fill and the incredible impact it will have on establishing a more diverse and inclusive workforce.

I strongly support your submitting the program to the State of Florida as soon as possible so that students can begin enrolling and graduating to help fill the need for their skills.

Best regards,

Achille Ettorre
Managing Partner
Ettorre & Associates Ltd.

Appendix F – Notification to Local Institutions

Florida International University

School of Engineering, Technology and Design
300 N.E. 2nd Avenue
Miami, FL 33132

Miami Dade College

September 30, 2022

Dr. John L. Volakis
Dean of the College of Engineering and Computing
Florida International University

Dear Dr. Volakis:

In accordance with the approval process adopted by the Florida State Board of Education, Miami Dade College is notifying local higher education institutions regarding its intent to submit the following baccalaureate program to the State Board:

- **Bachelor of Science in Applied AI**

  Miami Dade College (MDC) will offer a Bachelor of Science (BS) degree in Applied Artificial Intelligence. The degree is designed to meet the demand for Artificial Intelligence (AI) professionals and will support the prosperity and growth of businesses in Florida.

  Through a comprehensive curriculum, students in this program will acquire the knowledge and skills needed for the practical applications of AI. They will learn about ethical standards and socially responsible practices in the implementation of AI systems and data-driven decision making. Course work includes Computer Vision, Natural Language Processing, Machine Learning, Applied Optimization Theory and Decision Making, AI Automation, Applied Simulation, Data Structures, and AI Capstone. Teaching and hands-on learning will be enhanced by the facilities, equipment, and AI technologies offered at the MDC state-of-the-art AI Center.

  The BS in Applied Artificial Intelligence will offer students enrolled in the Associate in Science (AS) Applied Artificial Intelligence a structured and continued academic pathway. The program is also suited for Associate in Arts or Associate in Science students who meet the admission requirements and are interested in gaining a BS degree in Artificial Intelligence. Graduates of this baccalaureate degree will be prepared for immediate entry into the workforce as AI Analysts and AI Programmers. The curriculum also prepares students to continue their education towards an advanced AI degree.

Should you wish additional information or would be interested in discussing any of these programs, please contact me at 305-237-3735 or by email at mperez@mdc.edu.

Sincerely,

Manuel Perez
Dean of Engineering, Technology and Design
Miami Dade College

CC: Michaela Tomova, Vice Provost Academic Affairs, Miami Dade College
Loretta Ovueraye, Vice Provost Workforce Programs & Professional Learning, Miami Dade College
Alicia Giovinazzo, Associate Provost, Academic Affairs, Miami Dade College

St. Thomas University

School of Engineering, Technology and Design
300 N.E. 2nd Avenue
Miami, FL 33132

Miami Dade College

September 30, 2022

Dr. Jeffery Plunkett
Interim Dean of the College of Health Sciences and Technology
St. Thomas University

Dear Dr. Plunkett:

In accordance with the approval process adopted by the Florida State Board of Education, Miami Dade College is notifying local higher education institutions regarding its intent to submit the following baccalaureate program to the State Board:

- **Bachelor of Science in Applied AI**

  Miami Dade College (MDC) will offer a Bachelor of Science (BS) degree in Applied Artificial Intelligence. The degree is designed to meet the demand for Artificial Intelligence (AI) professionals and will support the prosperity and growth of businesses in Florida.

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Should you wish additional information or would be interested in discussing any of these programs, please contact me at 305-237-3735 or by email at mperez@mdc.edu.

Sincerely,

Manuel Perez
Dean of Engineering, Technology and Design
Miami Dade College

CC: Michaela Tomova, Vice Provost Academic Affairs, Miami Dade College
Loretta Ovueraye, Vice Provost Workforce Programs & Professional Learning, Miami Dade College
Alicia Giovinazzo, Associate Provost, Academic Affairs, Miami Dade College

School of Engineering, Technology and Design
300 N.E. 2nd Avenue
Miami, FL 33132

Miami Dade College

September 30, 2022

Dr. Karen Callaghan
Dean of the College of Arts and Sciences
Barry University

Dear Dr. Callaghan:

In accordance with the approval process adopted by the Florida State Board of Education, Miami Dade College is notifying local higher education institutions regarding its intent to submit the following baccalaureate program to the State Board:

- **Bachelor of Science in Applied AI**

  Miami Dade College (MDC) will offer a Bachelor of Science (BS) degree in Applied Artificial Intelligence. The degree is designed to meet the demand for Artificial Intelligence (AI) professionals and will support the prosperity and growth of businesses in Florida.

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Sincerely,

Manuel Perez
Dean of Engineering, Technology and Design
Miami Dade College

CC: Michaela Tomova, Vice Provost Academic Affairs, Miami Dade College
Loretta Ovueraye, Vice Provost Workforce Programs & Professional Learning, Miami Dade College
Alicia Giovinazzo, Associate Provost, Academic Affairs, Miami Dade College