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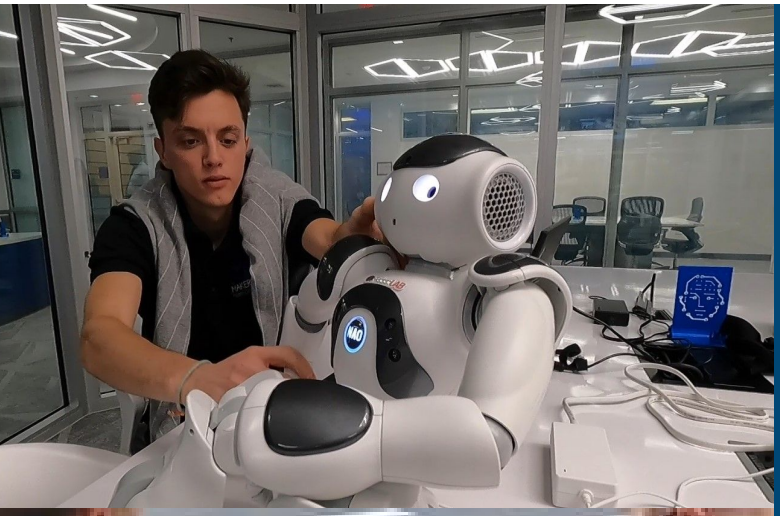


ACADEMIC GUIDE FOR ADVISORS

ARTIFICIAL INTELLIGENCE COURSES AND PROGRAMS

Resource provided by: Miami Dade College

Miami Dade College

About the School of Engineering and Technology (EnTec)

Our mission is to provide students with unmatched opportunities and access to in-demand and exciting careers in the fields of engineering and technology.

- **EnTec offers over 30 degrees and pathways**
- Curriculum is aligned with industry demand and standards
- **EnTec has forged strong partnerships with businesses and industry leaders that add value to the School and increases opportunities for students**
- The School strives to cultivate student engagement through extracurricular activities from student clubs to tech competitions and from mentoring to speaker series

GROWING CAREERS IN

APPLIED ARTIFICIAL INTELLIGENCE

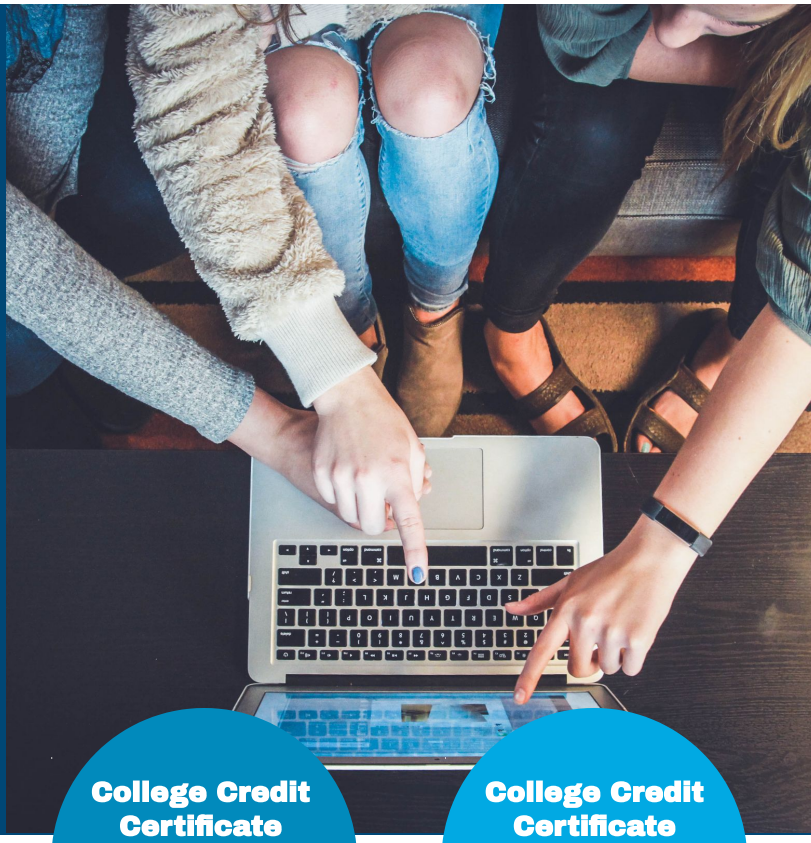
- Artificial intelligence (AI) is expected to change the future of work with many experts predicting it to contribute to the fourth industrial revolution. The global AI market size was already valued at USD 93.5 billion in 2021 and is projected to expand at a compound annual growth rate (CAGR) of 38.1% from 2022 to 2030.
- Businesses are increasingly investing in AI technologies to improve efficiency, automate processes, and enhance decision making. This shift has created a growing demand for applied AI professionals.
- Applied AI is integrated into all industries such as healthcare, finance, and retail. Each industry has unique challenges and requirements needing specialized roles for applied AI professionals.
- Job prospects are bright with the Bureau of Labor Statistics (BLS) reporting 31,700 jobs in computer and information science. This includes AI specialist jobs. By 2028, the BLS expects this number to increase by another 5,300 jobs. This is much faster than average.

WHY **APPLIED AI** AT MDC?

- Curriculum was built through collaborative efforts between faculty, AI industry experts, and organizations that advance the teaching and learning of these technologies.
- Curriculum is focused on the practical application of AI systems and tools, allowing students to enter the field with undergraduate-level credentials.
- MDC's state-of-the-art AI Centers located at two conveniently located campuses serve as hubs where technology leaders, industry experts, and students can engage, collaborate, and learn about AI.
- Students have access to Makers Space, Design Thinking, and Robotics Labs where they can ideate, create projects and engage in team discussions.
- Whether students are looking to explore how AI can be applied to their field or are interested in becoming an AI Practitioner, MDC has a range of short and long-term programs that are stackable. This model allows an individual to build-up qualifications.

ARTIFICIAL INTELLIGENCE (AI)

ACADEMIC PROGRAMS



Bachelor of Science (B.S.) Applied Artificial Intelligence

Students acquire hands-on skills and cutting-edge knowledge on the practical applications of AI technologies. Students additionally learn about ethical standards and socially responsible practices in the implementation of AI systems and data-driven decision-making. **Program is expected to launch Fall 2024.**

Associate in Science (A.S.) Applied Artificial Intelligence

Students acquire the knowledge and skills required to effectively maintain AI systems. Students learn the lifecycle of an AI project, from conception to deployment, while taking ethical considerations into account throughout the planning and development process.

College Credit Certificate (C.C.C.) Artificial Intelligence Practitioner

This six-course program prepare students to launch a career in AI allowing them to contribute to the competitive advantage organizations acquire when they use these technologies. Students discover core AI applications and explore the ethical considerations involved in their design and implementation.

College Credit Certificate (C.C.C.) Artificial Intelligence Awareness

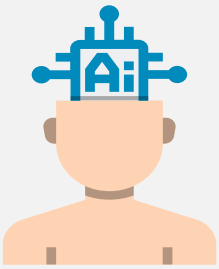
Whether a student is an aspiring AI enthusiast or a seasoned professional seeking to upskill, this three-course program offers the fundamental digital and AI competencies that employers are exceedingly looking for in today's competitive job market. A technology background is not needed.

ASSOCIATE IN SCIENCE (A.S.)

APPLIED ARTIFICIAL INTELLIGENCE

Applied Artificial Intelligence
Associate in Science | Code: 25080 | 60 credits

Program description: The Associate in Science in Applied Artificial Intelligence introduces learners to the importance of managing the lifecycle of an artificial intelligence (AI) project and ethical considerations relevant to its design and implementation. It offers hands-on learning on the applications of AI and use cases. Students also learn concepts and popular tools such as machine learning, data collection, classification, natural language processing, the functions of AI virtual assistants, and techniques used in AI for computer vision as domains to build AI solutions. The program is geared for those who want to enter or upskill into the field as AI Developers or AI Specialists.



What students learn...

Machine Learning: Students learn machine learning concepts and the use of Python applications designed for machine learning tasks. Additionally, students develop and deploy artificial intelligence (AI) models utilizing classification algorithms.

Natural Language Processing (NLP): This area of study focuses on the use of AI to understand and process human language. Students learn the fundamental concepts of NLP and text processing, with a focus on knowledge and skills necessary to create a language recognition application.

Computer Vision: This field of study focuses on enabling computers to interpret and understand visual data, similar to how humans perceive and analyze visual information. Students learn fundamental concepts in computer vision and image processing, including introduction to necessary proprietary and open-source Python libraries.

Ethics and Social Responsibility: Students learn about ethics relevant to the design, implementation, and administration of artificial intelligence and emerging technologies. Students explore issues such as the biases of algorithms, the risks associated with the use of advanced technologies, and the effects of AI technologies on society.

Important Courses That Supports AI Coursework: Python programming, cloud computing essentials, statistical methods, and database design are additional core classes essential to support learning and the applications of AI technologies.

Career Prospects

Career opportunities for graduates of this program include, but are not limited to:

- Artificial Intelligence Analyst
- Artificial Intelligence Specialist
- Artificial Intelligence Developer

COURSE SEQUENCE GUIDE FOR FULL-TIME ENROLLMENT

Applied Artificial Intelligence
Associate in Science | 60 credits

Semester 1

Course ID	Course Title	Credits	Pre/Co-requisites	CCC-AI Awareness	CCC-AI Practitioner
CAI 1001C	Artificial Intelligence (AI) Thinking	3		✓	✓
CGS 1060C	Introduction to Computer Technology & Applications	4			
COP 1047C	Introduction to Python Programming	4	**Note:** Course prepares students for Python Coding Specialist industry certification		✓
MAC 1105	College Algebra	3	Prerequisite: MAT 1033 **Note:** Students must seek advisement for proper mathematics course from discipline chairperson.		
	Semester Credits	**14**			

Semester 2

Course ID	Course Title	Credits	Pre/Co-requisites	CCC-AI Awareness	CCC-AI Practitioner
CAI 2100C	Machine Learning Foundations	3	Prerequisite: CAI 1001C Recommended: Completion of COP 1047C		✓
ENC 1101	English Composition 1	3	Prerequisite: Student must meet the Developmental Education reading & writing requirements in State Rule 6A-10.0315 (by course, placement score, or eligible exemption).		
PHI 2680	Artificial Intelligence and Ethics	3		✓	✓
STA 2023	Statistical Methods	3	Prerequisite: MAT 1033 or MGF 1131		
	Semester Credits	**12**			

Semester 3

Course ID	Course Title	Credits	Pre/Co-requisites	CCC-AI Awareness	CCC-AI Practitioner
Social Science	AMH 2010, AMH 2020, POS 2041	3	**Note:** Students must satisfy civic literacy requirement by successfully completing AMH 2010, AMH 2020 or POS 2041, which are course options for General Education - Social Sciences. Students are additionally required to achieve a passing score on an approved assessment. Please see Testing Department for examinations and exemptions.		
CGS 1540C	Database Concepts and Design	4			
	Semester Credits	**7**			

Note: To see list of program required courses, visit mdc.edu/appliedai

COURSE SEQUENCE GUIDE FOR FULL-TIME ENROLLMENT

Applied Artificial Intelligence
Associate in Science | 60 credits

Semester 4

Course ID	Course Title	Credits	Pre/Co-requisites	CCC-AI Awareness	CCC-AI Practitioner
CAI 2300C	Introduction to Natural Language Processing	3	Prerequisite: CAI 2100C		✓
CAI 2840C	Introduction to Computer Vision	3	Prerequisite: CAI 2100C		✓
CTS 1145	Cloud Essentials	4	**Note:** Course prepares students for AWS Certified Cloud Practitioner industry		
Elective	CAP 1788, COP 2800, CTS 1120, GEB 1432, HSC 2060, ETS 1603C, MAC*, MAD*, MAP*	4	**Note:** Students interested in the BS in Applied Artificial Intelligence are recommended to take COP 2800. See academic advisor for course requisites.	GEB 1432, HSC 2060, ETS 1603C	
	Semester Credits	**14**			

Semester 5

Course ID	Course Title	Credits	Pre/Co-requisites	CCC-AI Awareness	CCC-AI Practitioner
CAI 2820C	Artificial Intelligence Application Solutions	3	Prerequisites: CAI 2300C and CAI 2840C		
Elective	CAP 1788, COP 2800, CTS 1120, GEB 1432, HSC 2060, ETS 1603C, MAC*, MAD*, MAP*	4	**Note:** Students interested in the BS in Applied Artificial Intelligence are recommended to take COP 2800. See academic advisor for course requisites.	GEB 1432, HSC 2060, ETS 1603C	
Humanities	ARH 1000, HUM 1020, LIT 2000, MUL 1010, PHI 2010, THE 2000	3	**Note:** ENC 1101 is a prerequisite to LIT 2000.		
Natural Science	AST 1002, BSC 1005, CHM 1020, ESC 1000, EVR 1001, GLY 1010, OCE 1001, PHY 1020	3			
	Semester Credits	**13**			
	Program Total	**60**		**9**	**18**

Academic Pathway at MDC: The AS in Applied Artificial Intelligence is a pathway to the BS in Applied Artificial Intelligence (Plan Code S9520). Program courses lead to a College Credit Certificate (CCC) in Artificial Intelligence Awareness (Plan Code: 66040) and a CCC in Artificial Intelligence Practitioner (Plan Code: 66041). To learn more about program courses, see the College Catalog. Certain courses will prepare you for in-demand industry certifications and costs of exams may be eligible for reimbursement. You may also accelerate your studies via credit for prior learning or credit for attained industry certifications. Learn more.

Note: To see list of program required courses, visit mdc.edu/appliedai

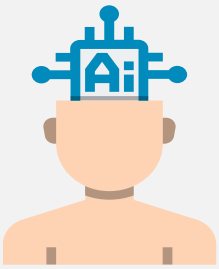
COLLEGE CREDIT CERTIFICATE (C.C.C.)

ARTIFICIAL INTELLIGENCE PRACTITIONER

Artificial Intelligence Practitioner
College Credit Certificate | Code: 66041 | 18 credits

Program description: As artificial intelligence (AI) continues to expand in every industry, so will the demand for skilled professionals in applied AI. The College Credit Certificate in Artificial Intelligence Practitioner is for individuals with or without a technical background who are interested in entering this growing field. Learners will be introduced to core AI applications and the ethical considerations in their design and execution. Case studies and real-world applications will support learning in the fundamentals of machine learning, the functions of AI virtual assistants, and techniques used in computer vision.

What students learn...



Machine Learning: Students learn machine learning concepts and the use of Python applications designed for machine learning tasks. Additionally, students develop and deploy artificial intelligence (AI) models utilizing classification algorithms.

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Computer Vision: This field of study focuses on enabling computers to interpret and understand visual data, similar to how humans perceive and analyze visual information. Students learn fundamental concepts in computer vision and image processing, including introduction to necessary proprietary and open-source Python libraries.

Ethics and Social Responsibility: Students learn about ethics relevant to the design, implementation, and administration of artificial intelligence and emerging technologies. Students explore issues such as the biases of algorithms, the risks associated with the use of advanced technologies, and the effects of AI technologies on society.

Course Elective: Students may choose from Python Programming, Applied AI in Business, Introduction to Robotics, or Statistical Methods. While not required, students are **strongly recommended** to enroll in Python Programming prior to taking Machine Learning.

Career Prospects

Career opportunities for graduates of this program include, but are not limited to:

- Artificial Intelligence Specialist
- Artificial Intelligence Developer

COLLEGE CREDIT CERTIFICATE (C.C.C.)

ARTIFICIAL INTELLIGENCE AWARENESS

Who is Best Suited for this Program?

Whether a student is just starting college and is interested in exploring how to apply AI to their area of study or a seasoned professional looking to upskills, this program is for all. A technology background is not needed as it is designed to empower individuals in varied disciplines to future-proof their careers by understanding the skills and knowledge needed to work effectively alongside AI systems.

Artificial Intelligence Awareness
College Credit Certificate | Code: 66040 | 9 credits

Program description: As the impact of artificial intelligence (AI) expands to every industry, foundational knowledge of the applications of these systems is something employers are exceedingly looking for. The College Credit Certificate in Artificial Intelligence Awareness is suited for students in any field interested in learning about the applications of AI across a variety of sectors, stages involved in a typical AI project, and the ethical considerations when adopting these technologies.

What Students Learn...

AI Thinking: Students acquire an overview of AI technologies, its applications, and fundamental concepts that enable these systems to integrate into the workplace.

Ethics and Social Responsibility: Being AI-aware means having an understanding of responsible AI development and usage, ensuring that AI systems are designed and deployed with ethical considerations in mind. Students learn about ethics relevant to the design, implementation, and administration of artificial intelligence and emerging technologies. Students explore issues such as the biases of algorithms, the risks associated with the use of advanced technologies, and the effects of AI technologies on society.

Course Elective: Students have the opportunity to explore how AI may be applied to their field of study or business sector. Students may choose from Applied AI in Business or Introduction to Robotics.

Related Careers

AI presents numerous opportunities for innovation, growth, and career development. By being AI-aware, individuals can identify areas within their field of study or business sector where AI can be applied to create new possibilities for problem-solving, automation, and efficiency. This program may be applied to various career paths ranging from marketing to engineering.

ARTIFICIAL INTELLIGENCE

FACILITIES AND EXTRACURRICULA

- The state-of-the-art AI Center located at the North campus is a 13,000 square feet facility with dedicated classrooms, quantum computing labs, multi-use spaces and a design-thinking room. A robotics lab and a fully equipped makerspace facilitate taking an AI project from concept to prototype. Location: MDC North. Building 1, 2nd Floor 11380 NW 27th Ave, Miami, FL 33167

- Equally impressive is the AI Center located at the Wolfson Campus campus with top-notch equipment and collaborative spaces for students to learn and work on AI projects. Location: MDC Wolfson , Building 2, 1st Floor 300 NE 2nd Ave, Miami, FL 33132

- Connect and learn from AI experts through MDC's AI Speaker Series: mdc.edu/aicenter/events

- MDC partners with leading technology companies and experts in AI to enhance our educational programs and experiences. These partnerships have contributed to the offering of internships, digital badges, mentoring and more: mdc.edu/aicenter/partnerships

PAYING FOR COLLEGE

- Javier Coto Scholarship: Available for AI lower division courses with "CAE" prefix. Funds are applied automatically at the in-state tuition rate after all other resources available to cover tuition and fees have been applied. To learn about eligibility criteria, scholarship coverage and term availability of funds, please visit: mdc.edu/entec/scholarships

- AI for ALL: It provides free tuition to students registered in AI courses at MDC. To learn about eligibility, what is covered, and scholarship duration, visit: mdc.edu/entec/scholarships

- Other: MDC offers various scholarship opportunities for new, continuing, returning, and transfer students. To learn more about the numerous opportunities available, visit: mdc.edu/financialaid/scholarships