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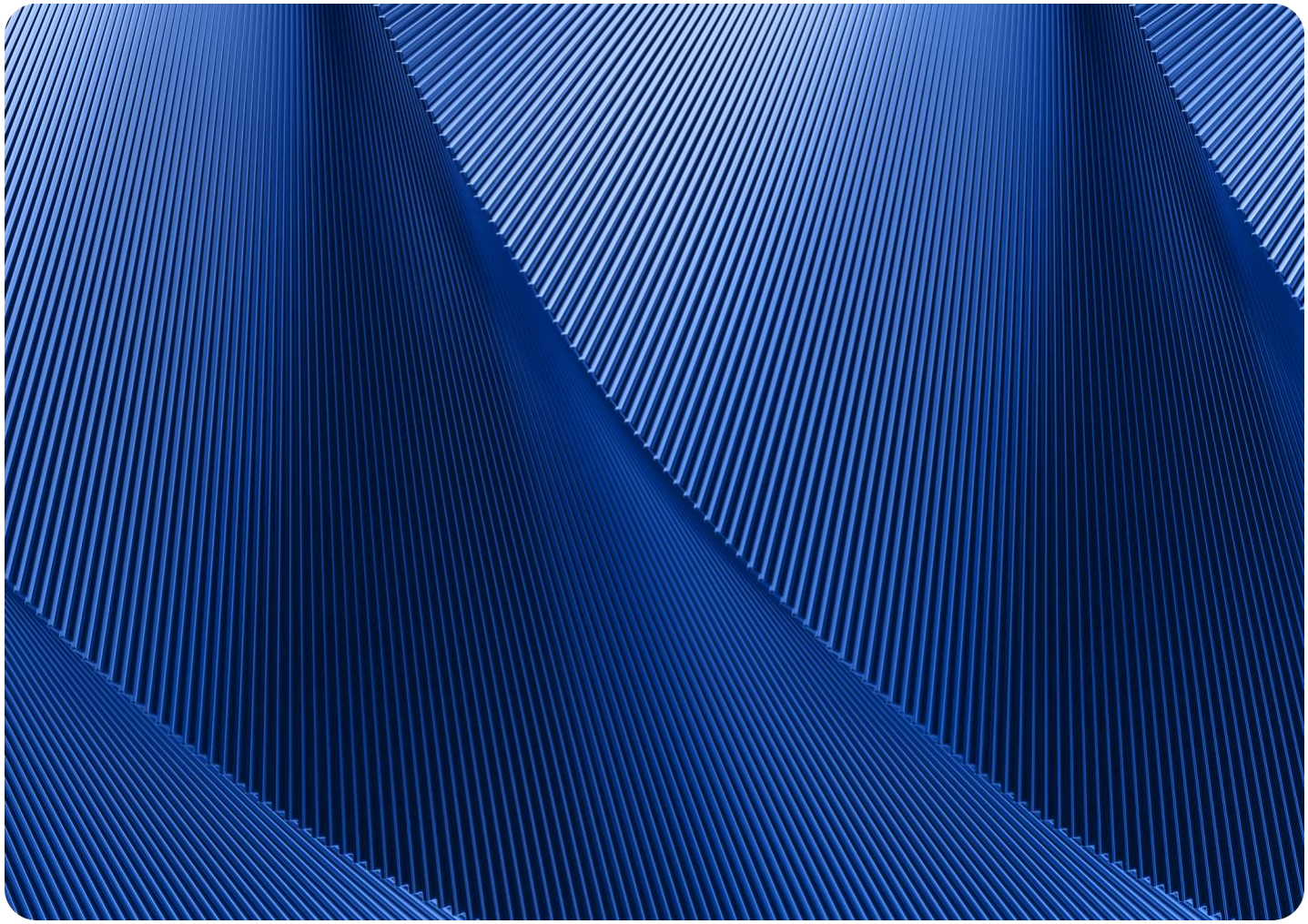
Miami Dade College

Course Syllabus

Artificial Intelligence Applications

This capstone course provides hands-on experience with AI tools, where students will use what they learned in previous AI courses.



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Course Description

A lower division course for students majoring in Applied Artificial Intelligence (AI). Students will demonstrate competence to scope, acquire/explore data, model, evaluate, and deploy an AI/machine learning solution in a team environment. Students will create and present a code or no-code AI solution. Must be taken during the last semester before graduation.

Prerequisites:
Introduction to Computer Vision
Introduction to Natural Language Processing

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Course Competencies

Competency 1
The student will display effective communication and team building skills in an AI project by:
a) Selecting the project team members and defining their respective roles and responsibilities b) Developing a mechanism for clear and consistent communication among team members c) Setting clear goals and objectives to monitor the team's ongoing effectiveness
Competency 2
The student will successfully formulate project requirements and a statement of work by:
a) Determining project purpose and the scope of work to be conducted b) Planning the project deliverables and the respective timeline with milestones c) Selecting quantifiable criteria that must be met for the work to be acceptable and approved d) Delivering a formal report following the assigned format and style e) Presenting their project to the college community f) Describing the importance of security technologies, processes, and practices appropriate for the project
Competency 3
The student will develop AI solutions to satisfy project requirements by:
a) Applying Human-Centered Design, Socially Responsible Computing, and Design Thinking to develop and implement an AI solution b) Using the AI project lifecycle process: problem definition, data acquisition, data exploration and visualizations, model development, evaluation, and deployment c) Implementing an AI solution demonstrating the use of Dashboards, Data Visualization, and the design of Machine Learning Models d) Documenting each lifecycle phase following the assigned format and style e) Using AI models to solve common industry applications (Supervised, Unsupervised and Reinforce Learning)

Competency 4
The student will articulate issues related to AI projects by: a) Assessing the unique attributes and diverse nature of AI solutions b) Examining recent trends affecting AI applications c) Exploring ethical considerations and the potential pitfalls of implementing AI solutions in society

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Instructional Resources

No prescribed textbook is required due to the rapidly evolving nature of computer vision tools, frameworks, and best practices. Instructors will curate up-to-date articles, tutorials, documentation, and other resources available to provide the latest advancements and diverse perspectives. This approach ensures flexibility to tailor content to class needs and incorporate emerging topics and industry practices.

Platforms and Tools:
Kaggle, Google Colab, Jupyter notebook, Orange data mining, Python 3.7+, Anaconda, Intel® OpenVINO 2021

Grading Schema

Assignment Type	Percentage of Grade
Assignments	30%
Projects	60%
Attendance	10%

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Course Outline

Week starting on / Module	Module Topic
Week 1	Introduction to Projects and Syllabus Overview
Week 2	Problem definition
Week 3	Data Acquisition, Exploration, and Visualization
Week 4	Model deployment
Week 5	Evaluation and deployment
Week 6	Project presentation