

AI Fundamentals

EEL 3872 - Section EED1/EED2/ EED3/DUAL, Class Number: 18981/21381/26301/23976

Class Periods: N/A

Location: 100 % On-line

Academic Term: Fall 2025

Instructor:

Diego Alvarado, M.E. M.R.E.

Email Address: dalvaradopalma@ufl.edu

Office location: 307 Nuclear Science Building (NSB)

Office Hours: Wednesday and Thursday from 2:30 pm to 3:30 pm via Zoom (or by appointment)

Teaching Assistant/Peer Mentor/Supervised Teaching Student:

Please contact through the Canvas website

- See the list of Peer Mentors on Canvas

Course Description

An overview of Artificial Intelligence (AI), approaching the concept from its origins to expectations for the future. The course will focus on various AI technologies, how to build Machine Learning models, and how to apply AI tools to solve real-world problems. Some of the concepts that will be introduced in the course are types of AI and Machine Learning, Hacking and the IoT, AI today, and its outlook for the future.

Course Pre-Requisites / Co-Requisites

Junior standing or above, or instructor permission.

Course Objectives

This 3-credit course intends to introduce you to the fundamental concepts of Artificial Intelligence. You will gain experience in:

- Understanding the history and types of AI
- Explaining the different methods of Machine Learning and its uses
- Creating your own Machine Learning models
- Being an informed user of AI tools

Materials and Supply Fees: see the Undergraduate Catalog

Required Textbooks and Software

Notes will be derived from different sources and developed by the instructors.

Required Computer

Recommended Computer Specifications: <https://it.ufl.edu/get-help/student-computer-recommendations/>

HWCOE Computer Requirements: <https://www.eng.ufl.edu/students/advising/fall-semester-checklist/computer-requirements/>

Course Schedule

Week 1:	Class Introduction / AI Introduction
Week 2:	Programming / Programming vs AI
Week 3:	What is AI and why is it important
Week 4:	AI History
Week 5:	AI First Activities
Week 6:	Machine Learning
Week 7:	Machine Learning – Supervised Learning
Week 8:	Machine Learning – Unsupervised Learning

Week 9:	Machine Learning – Reinforcement Learning
Week 10:	Machine Learning – Neural Networks
Week 11:	Machine Learning – Project
Week 12:	Generative AI / IoT
Week 13:	AI today
Week 14:	AI today
Week 15:	Responsible AI and E-safety

Important Dates

See Canvas for a list of important dates

Attendance Policy, Class Expectations, and Make-Up Policy

- The class is 100% online, so there is no attendance; however, you are responsible for the announcements made on Canvas and all the material on Canvas.
- Requirements for class attendance and make-up exams/quizzes, assignments, and other work in this course are consistent with university policies. Click here to read the university attendance policies: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>
- University and Departmental guidelines will be applied to categorize excused and unexcused absences.
 - Students able should notify the instructor of excused absences via email IN ADVANCE of the planned absence; in emergencies, the notification should occur BEFORE THE END OF THE FOLLOWING WEEK.
 - Regardless of whether an absence is excused or unexcused, students are responsible for any coursework missed as a result of the absence. As most assignments will be posted in advance, students should have sufficient time to complete and submit these assignments in spite of excused activities/absences, unless otherwise discussed and approved by the professor. For excused absences, students are expected to be aware of all announcements made in class and know all previously covered material when watching the following video.

Homework and Other Assignments

Homework assignments will be given regularly. Soft-copy assignments will be due by the posted e-Learning submission deadline. These are assumed to be individual work unless the specific assignment specifies a group activity.

Late Assignments and Quiz Make-Up Policy

Late homework assignments will be accepted for one week after the due date without a penalty.

There will be a one-week automatic “grace” period for every assignment and quiz. This is intended to be used for emergencies only. The quiz or assignment is due on the due date. Without penalty and approval, you can turn it in up to one week late. Keep in mind, of course, that if something were to occur during the grace period, this would not be an adequate reason for an extension. You will need to show that you were not able to complete the assignment or quiz on time by the original due date, and that the one-week grace period was inadequate to recover from that incident or problem and take the quiz or turn in the assignment. I believe these situations will be extremely rare.

A word about late or missing quizzes: I understand that sometimes life, minor illness, or other classes, or just plain mistakes are made, and a quiz or assignment is missed or completed late. I don’t want to be the judge and jury of your misfortune. Sometimes bad things happen. The automatic grace period of one week allows you the privacy and flexibility to prioritize without worrying about my judgment or having one mistake result in a major grade impact. This grading does not remove an opportunity to make up a quiz or assignment due to an excused absence (see below), but given the generous one-week grace for grading, I would assume these are rare. Usually, quizzes or assignments are open for 7 to 14 days; students who anticipate

issues with conflicting activities should complete the quizzes earlier in the week. I believe, and hope you agree, this policy is clear, fair, and flexible. I ask in return that if you truly need an exception beyond this built-in flexibility, you are clear and honest about that need.

There are no make-ups for missed quizzes related to an unexcused absence after the grace period.

In general, there will be no makeup assignments given. However, a student is permitted to make up a missed assignment without penalty if he/she/they has/have a conflict between an assignment and a scheduled University-approved activity (please do not ask for a make-up quiz to attend a job interview). A student needing a make-up assignment due to schedule conflicts must notify the instructor at least one week before the day the assignment is scheduled for. Excused absences are consistent with university policies in the undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require appropriate documentation.

Medical emergencies are, of course, excluded if accompanied by a doctor's note. **A note indicating that you were seen at the health center the day of the assignment is not sufficient documentation of a medically excused absence.** The note must say that you were medically unable to complete the assignment.

If you fail to complete the assignment by the assigned day or after the grace period and do not have a valid excuse, there will be no make-up, and you will be given a zero (0) on the assignment. Employment interviews, employer events, weddings, vacations, etc., are not excused absences.

Evaluation of Grades

Your performance in the course will be evaluated based on regular assignments and projects as follows:

Assignment	Percentage of Final Grade
Homework / In-class Assignments / Quizzes / Discussions	60%
Project #1	20%
Project #2	10%
Project #3	10%
	100%

Grading Policy

Percent	Grade	Grade Points
90.0 - 100	A	4.00
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00
70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	D-	0.67
0 - 59.9	E	0.00

Academic Policies & Resources

To support consistent and accessible communication of university-wide student resources, instructors must include this link to academic policies and campus resources: <https://go.ufl.edu/syllabuspolices>. Instructor-specific guidelines for courses must accommodate these policies.

Commitment to a Positive Learning Environment

The Herbert Wertheim College of Engineering values varied perspectives and lived experiences within our community and is committed to supporting the University's core values.

If you feel like your performance in class is being impacted, please contact your instructor or any of the following:

- Your academic advisor or Undergraduate Coordinator
- HWCOE Human Resources, 352-392-0904, student-support-hr@eng.ufl.edu
- Pam Dickrell, Associate Dean of Student Affairs, 352-392-2177, pld@ufl.edu