

Syllabus

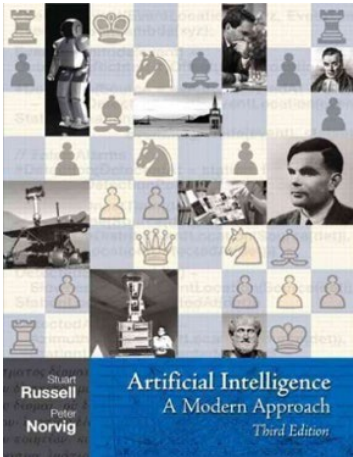
CAP 4630/5605 – Intro to AI

Instructor Information

Professor:	Dr. Ayan Dutta
Email:	a.dutta@unf.edu
Office location:	15/3222
Office Hours (15/3222 or via Microsoft Teams):	TR 10.30 am-noon. TR 3–4 pm.

- Please **allow 24-48 hours** to receive a response to your email if it is related to current lecture material or assignments. Allow slightly longer otherwise.
- Please include your name, N#, and course number (**CAP 4630**) when sending mail.
- It is solely a student's responsibility to check their **UNF email accounts** and **Canvas course announcement section** to get notified of an update.

Textbook

	Russell, S. J., & Norvig, P. (2016). <i>Artificial intelligence: a modern approach</i> . Malaysia; Pearson Education Limited.
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Topics

Primarily, three pillars of AI will be covered in this course:

- **Searching:** how to search for a solution in a large solution space, e.g., searching for a path from location *A* to *B*.
- **Planning:** how to plan your actions according to the different states of the environment, e.g., plan to clean a room using a Roomba vacuum cleaner.
- **Learning:** how to learn from your collected data and/or your past actions, e.g., how a robotic arm can learn to manipulate an object.

The students will complete assignments and project(s) in order to pass the course. Topics that will be covered in this course are listed below:

- Chapters 1 and 2: Introduction.
- Chapter 3. Classical searching.
- Chapter 4. Advanced search.
- Chapter 5. Game Theory.
- Chapter 6: CSP.
- Chapter 13: Uncertainty.
- Chapter 14: Probabilistic Reasoning.
- Chapter 16: MDP.
- Chapter 18: Supervised learning.
- Chapter 21: Reinforcement Learning.

Student Outcomes

At the end of the course, students will achieve the following:

- Build autonomous agents which can make decisions on their own.
- Understanding of which search algorithm to use for a given problem.
- Describe and illustrate the role of constraint satisfaction in AI, with appropriate examples.
- Understanding the potential and limitations of different AI techniques.
- Discuss the role of probabilistic reasoning and the mechanisms that employ it.
- Experiment with multiple machine learning algorithms for classification.

Performance Evaluation Scale

Letter Grade	Final Score Range
A	≥ 93.00%
A-	90.00 – 92.99%

B+	87.00 – 89.99%
B	83.00 – 86.99%
B-	80.00 – 82.99%
C+	75.00 – 79.99%
C	70.00 – 74.99%
D	60.00 – 69.99%
F	< 60.00%

Grading Criteria

A student's final grade is based on the following evaluation methods:

Assignment Type	Count	Weight
Exams	2	30%
Project	1	25%
Assignments	4	45%

- The graduate students will complete 5 assignments compared to the 4 done by the undergraduate students.
- The graduate students' projects will be more complex than the undergraduate students and thus have been given a higher weight than the undergraduate projects.
- Late submissions **Will Not Be Accepted**. Format and requirements for submission of assignments will be provided with each assignment.
- Make-Up Exams **Will Not Be Given**. Exams need to be taken during the scheduled class time. Being absent from the exam will result in a 0 for that exam.
- Students are expected to arrive on time for the classes/exams.

Student Responsibilities

- Class attendance is essential.
- To avoid disruptions, please turn off or silence all cell phones, pagers, and similar electronic devices during classes and exams.
- Any electronic devices, such as a laptop, lab computer, and other electronic device utilization, in class, are only allowed if used for the AI class-related purposes. The connection of electronic devices to the network for surfing the Internet, personal use, and any other non-related course usage is inappropriate and is prohibited during the class.
- Personal lecture notes should be used for class and not posted for any group other than class members.

- Video, audio, or pictures should not be taken during the class unless there is prior permission.
- **Cheating & Plagiarism** will not be tolerated and will result in a grade of **F** for the course.
- To get the most out of this class:
 1. Attend all of the lectures.
 2. Read the chapters from the textbook.
 3. **Start early on your assignments/projects.**

Attendance Policy

The faculty of the School of Computing believe that students need to prioritize their academic studies during their enrollment in our programs. Due to the amount and complexity of the material, students should ensure their ability to attend the entire class period. Thus, we have developed the following attendance policy which may be used at the discretion of the course instructor:

- Students who miss **more than 25% of scheduled class meetings**, regardless of their grades, may be asked to withdraw from the class or given an “F” grade in the course.

Non-Discrimination Policy

The University of North Florida (UNF) is committed to providing an inclusive and welcoming environment for all who interact in our community. To accomplish this intent, UNF shall not commit or permit discrimination or harassment on the basis of genetic information, race, color, religion, age, sex, disability, gender identity/expression, sexual orientation, marital status, national origin, or veteran status in any educational, employment, social or recreational program or activity it offers. Similarly, UNF will not commit or permit retaliation against an individual who complains of discrimination or harassment or an individual who cooperates in an investigation of an alleged violation of University Regulation. In exercising these standards, the University will not abridge either free speech or academic freedom based on its context. Accordingly, any member of the UNF community who believes that they have been subjected to discrimination, discriminatory harassment, retaliation, or sexual misconduct may seek guidance, counseling and/or file a complaint by contacting: Cheryl Gonzalez, Director, E.O.D. and Title IX Administrator, located at Building One, J.J. Daniel Hall, Suite 1201, 1 UNF Drive, Jacksonville, Florida 32224-7699, or call (904) 620-2507 or via 711 Florida Relay for persons who are deaf or hard of hearing or those with speech impairments and/or limitations.