



## CAP 4630.01 Artificial Intelligence Syllabus - Spring 2026

### Course Information

- **Course Number and Title:** CAP4630.02 Artificial Intelligence
- **Credit Hours:** 3 (3 lecture / 0 lab)
- **Current Academic Term:** Spring 2026

### Instructor Information

- **Instructor:** Dr. Luis G. Jaimes
- **Office:** BARC-2225
- **Office Hours:** M: 2 PM-3 PM, TR: 11 AM – 12 PM
- **E-mail:** [ljaimes@floridapoly.edu](mailto:ljaimes@floridapoly.edu)

### Course Details

- **Section:** 1
- **Class delivery mode:** Face-to-face (in-person/in-class)
- **Class Meeting Day, Time & Location:** TR 1 PM -2:15 PM, IST-1026
- **Course Website:** Canvas
- **Official Catalog Course Description:** This course covers fundamental concepts as in search and knowledge representation and applied work in areas such as planning, game playing, and vision. Topics included: logical reasoning, constraint satisfaction problems, graph search algorithms, Bayes rule, Bayesian networks, multi-agent systems, neural networks, decision trees, and natural language processing.
- **Course Website:** <https://floridapolytechnic.instructure.com/courses/8789>
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- **Prerequisites:** STA 2023 - Statistics 1 and COP 3415 - Data Structures
- **Communication/Computation Skills Requirement (6A-10.030): N**
- **Required Texts and Materials:**
  1. Artificial Intelligence: A Modern Approach (4th Edition). By Stuart Russell and Peter Norvig. Pearson, 2020. ISBN 978-0134610993.
- **Reference Book**
  1. Artificial Intelligence Illuminated, 1st edition, by Ben Coppin. ISBN: 978-0763732301.
  2. CLIPS Integrated Development Environment, an open-source programming environment.
- **Course Learning Outcomes:**
  1. Analyze various search methods to optimize solutions.
  2. Apply the minimax algorithm with alpha-beta pruning to guide computer moves during game playing.
  3. Apply various inference methods to deduce solutions.

- **Alignment with Program Outcomes (ABET):**

The Computer Science program at Florida Polytechnic University has aligned its Program Outcomes with the ABET Students Outcomes 1-6 from the ABET General Criterion 3 and the ABET Program Criteria. The table shown below summarizes how the CLOs stated above align with the Program Outcomes (ABET 1-6).

These outcomes are:

1. **Analyzing a Problem:** Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions
2. **Implementing a Solution:** Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline
3. **Communicating Effectively:** Communicate effectively in a variety of professional contexts
4. **Performing Legal & Ethical Analysis:** Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles
5. **Collaborating as a Team:** Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline
6. **Applying theory:** Apply computer science theory and software development fundamentals to produce computing-based solutions.

Program Outcome (ABET)	CLO-1	CLO-2	CLO-3
Analyzing a Problem	X		
Implementing a Solution			X
Communicating Effectively			
Performing Legal & Ethical Analysis			
Collaborating as a Team			
Applying theory		X	

#### Academic Support Resources

- **Library:** Students can access the Florida Polytechnic University Library through the University website and [Canvas](#), on and off campus. Students may direct questions to [library@floridapoly.edu](mailto:library@floridapoly.edu).
- **Tutoring and Learning Center:** The Tutoring and Learning Center (The TLC) provides tutoring to all Florida Poly students who may need additional academic support. The TLC is staffed by students who have excelled in the courses they tutor. They offer support by reviewing concepts and materials from class, clarifying points of confusion and providing assistance with learning strategies. While the focus of TLC is to provide support to students in freshman-level courses, upper-level courses are also tutored at the Center. The TLC is located in the IST Commons (second floor).
- **Knack Tutoring:** Students looking for additional assistance outside of the classroom are advised to consider working with a peer tutor through Knack. Florida Polytechnic University has partnered with Knack to provide students with access to verified peer tutors who have previously aced this course. To view available tutors, visit [floridapoly.joinknack.com](http://floridapoly.joinknack.com) and sign in with your student account.
- **Academic Success Coaches:** All students at Florida Poly are assigned an Academic Success Coach. Your Academic Success Coach can assist you with academic success strategies. Please visit the Student Success Center on the second floor of the IST building to meet with an Academic Success Coach.

- **Writing Center:** Located on the second floor of the IST (2059/2061), the Writing Center helps students to develop their writing and presentation skills. Consultations are available in person and virtually. For more detail, visit <https://floridapolytechnic.libguides.com/writingservices>

#### **Course Policies:**

##### **1. Contact Policy:**

Florida Polytechnic University email is the official method of communication for the University. Students are required to check their email frequently. The subject of your emails must start with "COP 4020:" followed by the topic. Fail to provide the correct subject, will result in ignoring the email. Any email received from an address other than the one with flpolypoly.edu domain will not be replied to.

##### **2. Attendance:**

Please see the [University Policy](#), "Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as defined by the instructor".

- This class requires "in-person/in-class attendance".
- The attendance is part of the final grade (see next section).
- The attendance will be taken through "A+ attendance" tool in Canvas.
- In case of absence, please inform the instructor of absence in advance, if possible, or as soon as possible afterward.
- A student with an excused absence will get more time to make up missed work without any reduction in the assigned work or final course grade given that the student provides an official/documentated excuse.
- Standard excused absence reasons: religious observances; legal responsibilities (jury duty, court obligations); military obligations; university-sponsored events; death or serious illness within their immediate family, or their own illness, or other reasonable circumstances.
- Exceptions to any attendance requirements may be made on a case-by-case basis.
- Campus CARE Services are available to work with students with serious or unusual circumstances. Contact [care@floridapoly.edu](mailto:care@floridapoly.edu)

##### **3. Participation:**

Students are expected to participate in the classroom experience. The use of earbuds/headphones during class is specifically not allowed and students who engage in this behavior may be asked to leave the class for the day (noting exceptions for authorized accommodations). In addition, students who routinely do not bring materials to class that are required for participation will not be given credit for class attendance, and if this becomes a pattern of behavior, may be asked to leave the class for the day. Persistent problems with participation may result in a code of conduct referral.

##### **4. Late Work/Make-up work:**

No late submissions.

**5. Assignment/Evaluation Methods:**

<b>Item</b>	<b>Percentage</b>
Attendance/Participation	5%
Quizzes	15%
Homework	20%
Exam 1	20%
Exam 2	20%
Final Exam	20%
<b>Total</b>	<b>100%</b>

**6. Grading Scale: (See also [University Grading Policy](#)).**

A	$\geq 93$	B	83-86	C	73-76	D	63-66
A-	90-92	B-	80-82	C-	70-72	D-	60-62
B+	87-89	C+	77-79	D+	67-69	F	< 60

**7. Individual work:**

For coursework (assignments, exams, quizzes), you are expected to do your own work individually and privately without any discussion with other students, the use of previously graded academic work, or the use of outside resources. Failing to do so will result in treating this as a violation of the Academic Integrity policy and your penalty will be a F grade in the course.

**Major Exams**

Two full-period major exams will cover material from lectures in class before the exam. Major exams are closed-book. You are responsible for the relevant information from the textbook, even if it is not covered fully in class. You are also responsible for reading the required reference materials.

**Final Exam**

The final exam will cover all the material from the semester and will be administered. The final exam is closed-book. You are responsible for the relevant information from the textbook, even if it is not covered fully in class. You are also responsible for reading the required reference materials.

**University Policies Reasonable**

**Accommodations**

The University is committed to ensuring equal access to all educational opportunities. The Office of Disability Services (ODS), facilitates reasonable accommodations for students with disabilities and documented eligibility. It is the student's responsibility to self-identify as a student with disabilities and register with ODS to request accommodations. If you have already registered with ODS, please ensure that you have requested an accommodation letter for this course through the [ODS student portal](#), and communicate with your instructor about your approved accommodations as soon as possible. Arrangements for testing accommodations must be made in advance. Accommodations are not retroactive. If you are not registered with ODS but believe you have a temporary health condition or permanent disability requiring an accommodation, please contact ODS as soon as possible: [DisabilityServices@floridapoly.edu](mailto:DisabilityServices@floridapoly.edu); (863) 874-8770;

<https://floridapoly.edu/student-affairs/health-wellness/disability-services.php>.

### **Accommodations for Religious Observances, Practices and Beliefs**

The University will reasonably accommodate the religious observances, practices, and beliefs of individuals in regard to admissions, class attendance, and the scheduling of examinations and work assignments. (See [University Policy](#).)

### **Title IX**

Florida Polytechnic University is committed to ensuring a safe, productive learning environment on our campus that prohibits sex discrimination and sexual misconduct, including sexual harassment, sexual assault, dating violence, domestic violence and stalking. Resources are available if you or someone you know needs assistance. Any faculty or staff member you speak to is required to report the incident to the Title IX Coordinator. Please know, however, that your information will be kept private to the greatest extent possible. You will not be required to share your experience. If you want to speak to someone who is permitted to keep your disclosure confidential, please seek assistance from the Florida Polytechnic University [Ombuds Office](#), BayCare's Student Assistance Program, 1-800-878-5470 and locally within the community at [Peace River Center](#), 863-413-2707 (24-hour hotline) or 863-413-2708 to schedule an appointment. The Title IX Coordinator is available for any questions to discuss resources and options available.

### **Academic Integrity**

Violations of [academic integrity regulation](#) include actions such as cheating, plagiarism, use of unauthorized resources (including but not limited to use of Artificial Intelligence tools), illegal use of intellectual property, and inappropriately aiding other students. Such actions undermine the central mission of the university and negatively impact the value of your Florida Poly degree. Suspected violations will be fully investigated, possibly resulting in sanctions up to and including expulsion from the university.

### **Recording Lectures**

Students may, without prior notice, record video or audio of a class lecture for a class in which the student is enrolled for their own personal educational use. Recordings may not be used as a substitute for class participation or class attendance. Recordings may not be published or shared in any way, either intentionally or accidentally, without the written consent of the faculty member. Failure to adhere to these requirements is a violation of state law (subject to civil penalty) and the student code of conduct (subject to disciplinary action). *Recording class activities including, but not limited to, lab sessions, student presentations (whether individually or part of a group), class discussion (except when incidental to and incorporated within a class lecture), and invited guest speakers is prohibited.*

### **Important Dates**

Jan. 19 <sup>th</sup> :	Martin Luther King Jr. Holiday - No Classes
Feb. 10 <sup>th</sup> :	Career Day - No Classes
Mar. 16 <sup>th</sup> -20 <sup>th</sup> :	Spring Break - No Classes
April 17 <sup>th</sup> :	Withdrawal Without Academic Penalty Deadline (W assigned)
April 28 <sup>th</sup> :	Last Day of Classes
TBD by Registrar:	Final Exam

### Tentative Schedule\*

- The following timetable is tentatively scheduled and subject to change by the instructor.

Important Dates: <https://floridapoly.edu/academics/academic-calendar/index.php>

Week	Topics / Readings
Week 1	Syllabus; Course overview; Chapter 1: What Is AI? (1.1.1–1.1.5); Chapter 2: Agents and Environments (2.1–2.2.3)
Week 2	Chapter 3: Problem-Solving Agents and Problem Formulation (3.1.1–3.1.2); Example Problems (3.2.1); Assignment 1
Week 3	Chapter 3: Uninformed Search Strategies (3.4.1–3.4.4: BFS, UCS, DFS, Iterative Deepening)
Week 4	Chapter 3: Informed Search (3.5.1–3.5.2: Greedy, A*); Heuristic Functions (3.6.1–3.6.2); Assignment 2
Week 5	Chapter 3: Search Performance and Heuristic Quality (3.3.4, 3.6.1); Review; <b>Exam 1 (TBD)</b>
Week 6	Chapter 4: Local Search and Optimization (4.1.1–4.1.3: Hill Climbing, Simulated Annealing, Local Beam)
Week 7	Chapter 6: Constraint Satisfaction Problems (6.1.1–6.1.2, 6.3.1–6.3.2); Assignment 3
Week 8	Midterm review and catch-up; Spring Break: No Class
Week 9	Chapter 5: Adversarial Search and Games (5.1.1, 5.2.1: Game trees and Minimax)
Week 10	Chapter 5: Alpha-Beta Pruning and Move Ordering (5.2.3–5.2.4); <b>Exam 2 (TBD)</b>
Week 11	Chapter 5: Evaluation Functions and Cutoffs (5.3.1–5.3.2); Programming Assignment 1
Week 12	Chapter 7: Knowledge-Based Agents and Propositional Logic (7.1–7.4.4); Assignment 4
Week 13	Chapter 7: Propositional Inference (7.5.2 Resolution; 7.5.4 Forward/Backward Chaining)
Week 14	Chapter 8: First-Order Logic (8.2.1–8.2.7); Chapter 9: Unification and Backward Chaining (9.2.1, 9.4.1–9.4.2)
Week 15	Chapter 12: Probability Basics and Bayes Rule (12.2.1–12.2.3, 12.5.1–12.5.2); Chapter 13: Bayesian Networks overview (13.2, 13.3.1)
Week 16	Final Exam (Search, Game Playing, and Inference)

*\*I reserve the right to modify this schedule as required by the progression of the class.*