San Jose State University
Department of Computer Science
CS 156, Introduction to Artificial Intelligence
Fall 2026

Course and Contact information:

Instructor Name: Maryam Khazaei

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Office hours: Tuesdays: 1:00 P.M -3:00 P.M – MacQuarrie Hall 214

Class Days/Times/Location:

- **Section 2:** Tuesdays / Thursdays 9:00 AM - 10:15 PM - MacQuarrie Hall 225
- **Section 3**: Tuesdays / Thursdays 10:30 AM - 11:45 AM - MacQuarrie Hall 225

Class Format: In-person

Prerequisites:
Prerequisite(s): CS 146 (with a grade of "C-" or better); Allowed Majors: Computer Science, Data Science, Computer Science and Linguistics, Applied and Computational Mathematics or Software Engineering; or instructor consent.

Course Description:

This course provides an introduction to the fundamental concepts, algorithms, and applications of Artificial Intelligence. Students will explore intelligent agents, problem-solving and search, game playing, probabilistic reasoning, machine learning, neural networks, and robotic path planning. The course emphasizes understanding how AI methods work and how they can be applied to practical problems. Through Python-based programming assignments, problem-solving exercises, discussions, and an applied AI presentation, students will develop the ability to implement, analyze, and evaluate basic AI techniques.

Textbooks and Other Required Materials:

- Russell and Norvig. Artificial Intelligence: A Modern Approach (Fourth Edition)
- Recent Papers from IEEE, ACM, or valid journals and conferences in AI/ML for presentation

Course Objectives / Student Learning Outcomes:

Upon successful completion of this course, students will be able to:

1. Explain fundamental AI concepts, including intelligent agents, rational behavior, and problem formulation.
2. Apply selected uninformed and heuristic search algorithms, such as BFS, DFS, Dijkstra's algorithm, and A*, to solve problems.
3. Analyze game-playing and strategic decision-making using concepts such as minimax, alpha-beta pruning, and Nash equilibrium.
4. Apply basic probabilistic reasoning and Bayesian methods to solve problems involving uncertainty.
5. Implement and evaluate introductory machine learning and neural network techniques for selected problems.
6. Explain basic approaches to robotic path planning and their use in AI applications.
7. Evaluate AI methods and applications based on their performance, limitations, and potential real-world impacts.

Project/Assignments/Discussions Description:

Applied AI Group Presentation: Students will work in groups of three to explore and present an applied Artificial Intelligence topic. Possible topics include AI in everyday life, recommendation systems, ChatGPT and LLMs, face recognition, navigation, AI in science and medicine, medical imaging, drug discovery, cancer prediction, AI in business and finance, fraud detection, marketing, autonomous systems, robotics, AI-generated content, deepfakes, AI and employment, bias, privacy, and other emerging AI applications. Each presentation should explain the AI technology or method being used, demonstrate the application through a live demonstration, video, website, simulation, dataset, or other relevant example, and discuss its strengths, limitations, and potential ethical or societal impacts. Presentations will be approximately 20 minutes, followed by 5 minutes for questions and discussion. All group members are expected to participate. Additional instructions, topic options, and presentation requirements will be provided later as needed.

Homework Assignments: Weekly/biweekly homework assignments will consist of both programming and non-programming exercises. These assignments are designed to deepen students' understanding of the course material and to prepare them for more complex challenges. Students will complete Python-based coding assignments covering selected AI topics, including search algorithms, game playing, machine learning, and robotic path planning. Detailed instructions and requirements will be provided for each assignment. Late assignments will receive a 10% penalty per day (or partial day), including weekends. Assignments submitted more than 2 days late, will not be accepted or graded.

Class Discussions: To foster critical thinking and engagement, class time will include opportunities for discussion. During lecture, students will be presented with thought-provoking questions related to the day's material. These discussions aim to solidify understanding of key concepts and to encourage students to apply their knowledge in different contexts.

Midterm/Final Exam Schedule:

This schedule is subject to change, but is tentatively set as follows:

- Midterm: October 1, 2026
- Project proposal due and presentations: November 10-19
- Final Exams:
  - Section 2: December 10, 8:30-10:30 AM, MacQuarrie Hall 225
  - Section 3: December 10, 10:45 AM-12:45 PM, MacQuarrie Hall 225

Grading Policy:

- Homework (programing & non-programming): 25%
- Presentation: 15%
- Midterm: 30%
- Final Exam: 30%

Letter grades will be assigned according to the following policy:

A: 93 - 100
A-: 90 - 92
B+: 87 - 89
B: 83 - 86
B-: 80 - 82
C+: 77 - 79
C: 73 - 76
C-: 70 - 72
D+: 67 - 69
D: 63 - 66
D-: 60 - 62
F: 0 - 59

Recording and Privacy: Students are prohibited from recording class activities, distributing class recordings, or posting class recordings. Course materials created by the instructor including the syllabus, lectures, lecture notes, presentations, and other instructional materials are protected by copyright and may not be reproduced or distributed without permission. University Policy

S12-7 is intended to protect student privacy and support academic integrity by reducing opportunities for unauthorized sharing and cheating. Students who record, distribute, or post class activities or course materials without authorization may be referred to the Student Conduct and Ethical Development office. Unauthorized recording may also violate university policy and state law. Students who require recording or other assistive technology as disability accommodation are responsible for notifying the instructor and following the appropriate accommodation process.

University Policies: Per University Policy S16-9, relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on Syllabus Information web page (https://www.sjsu.edu/curriculum/courses/syllabus-info.php).

Academic Dishonesty Statement: The University Academic Integrity Policy S07-2 at http://www.sjsu.edu/senate/docs/S07-2.pdf requires you to be honest in all your academic coursework. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The attempt of students to present as their own any work that they have not honestly performed will be considered a violation. During examinations, you must do your own work. Talking or discussion is not permitted during the examinations, nor may you compare papers, copy from others, or collaborate in any way. Any collaborative behavior during the examinations will result in failure of the exam and may lead to failure of the course and University disciplinary action.

Disability Accommodations: If you require course adaptations or accommodations due to a disability, or if you need special arrangements in case of building evacuation, please schedule an appointment with me as soon as possible or visit me during office hours. Presidential Directive 97-03 mandates that students with disabilities register with the AEC to establish a record of their disability. Although students are not legally required to disclose the nature of their disability to faculty, they need to disclose their AEC registration if they will be utilizing course accommodations. Students are responsible for providing documentation that supports their learning disability diagnosis and justifies requested accommodation. If you have any specific questions or need further assistance, feel free to reach out to the AEC staff at aec-info@sjsu.edu or call (408) 924-6000 during regular business hours.

Artificial Intelligence (AI) Tools: Students may use AI tools such as ChatGPT, Gemini, and GitHub Copilot for brainstorming, explaining concepts, debugging, and getting unstuck. However, students may not use AI tools to generate substantial portions of code or written work and submit that material as their own. Any permitted use of AI must be disclosed. Students are responsible for understanding, verifying, and being able to explain all work they submit. Unauthorized or undisclosed use of AI-generated work may be considered academic misconduct and may result in a zero on the assignment and referral to the appropriate university office.

CS 156, Fall 2026, Introduction to Artificial Intelligence
Course Schedule (Subject to change with fair notice, which will be posted in Canvas)

Week	Date	Topics
1	Aug 20	Introduction: Syllabus, Course Logistics
2	Aug 25, 27	Introduction to AI Intelligent Agents
3	Sep 1, 3	Search Algorithms
4	Sep 8, 10	Search Algorithms
5	Sep 15, 17	Game theory
6	Sep 22, 24	Game theory
7	Sep 29, Oct 1	**Review and Midterm**
8	Oct 6, 8	Probabilistic Methods and Uncertainty
9	Oct 13, 15	Machine Learning
10	Oct 20, 22	Machine Learning
11	Oct 27, 29	Neural Networks Introduction to Robotics (Path Planning)
12	Nov 3, 5	Introduction to Robotics (Path Planning)
13	Nov 10, 12	Final presentation
14	Nov 17, 19	Final presentation
15	Nov 24, 26	Workshop Thanksgiving
16	Dec 1, 3	Final Exam Review
Final Exam		• Section 2: December 10, 8:30-10:30 AM, MacQuarrie Hall 225 • Section 3: December 10, 10:45-12:45 AM, MacQuarrie Hall 225