Introduction to Artificial Intelligence
CS 156

Spring 2026   In Person   3 Unit(s)   01/22/2026 to 05/11/2026   Modified 01/20/2026

👤 Contact Information

Instructor: Nagib Hakim, Ph.D.
Phone Number: (408) 307-4484
Email: nhakim@sjsu.edu
Office Hours: Duncan Hall 282 Thursday 3:00 - 4:00 pm (or by request)
Class Meets: MacQuarrie Hall 223
Sec8 Tue, Th 4:30-5:45pm in Room TBD

💻 Course Description and Requisites

Basic concepts and techniques of artificial intelligence: problem solving, search, deduction, intelligent agents, knowledge representation. Topics chosen from logic programming, game playing, planning, machine learning, natural language, neural nets, robotics.

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.
Grading: Letter Graded

Cross-listed with SE 156. Computer Science is responsible for scheduling.

📊 Program Information

Diversity Statement - At SJSU, it is important to create a safe learning environment where we can explore, learn, and grow together. We strive to build a diverse, equitable, inclusive culture that values, encourages, and supports students from all backgrounds and experiences.

📊 Course Learning Outcomes (CLOs)

By the end of this course, a student should be able to:

CLO1 -- Classify tasks and apply the right set of tools to solve them.

CLO2 -- Find solution nodes in a state space using the A* algorithm.

CLO3 -- Explain the advantages and disadvantages of the following techniques: (a) breadth-first search compared to depth-first search, (b) informed search compared to uninformed search, hill climbing, STRIPS/PDDL representations for planning.

CLO4 -- Apply forward checking in constraint satisfaction problems.

CLO5 -- Apply alpha-beta pruning in adversarial search.

CLO6 -- Translate sentences in first-order logic to conjunctive normal form (CNF).

CLO7 -- Understand what machine learning is and the types of machine learning algorithms

CLO8 -- Implement at least one machine learning algorithm.

📘 Course Materials

Required Texts:	[Artificial Intelligence: A Modern Approach. 4th Ed.](). Stuart Russell and Peter Norvig
Online References and Other Links:	[Official Python Website](). [Python Implementation of code from book]().

📋 Course Requirements and Assignments

We will have homework assignments, weekly quizzes and in-class programming exercises.

There will be 5 homework assignments, roughly every 2 weeks, except around exams. They are expected to be returned in time. A delay of up to a week results in a 10% penalty and up to 2 weeks 20%. After that the grade on that assignment will be 0. **For homework you are encouraged to work in groups of up to three people. Only one person out of this group needs to submit the homework assignment; however, the members of the group need to be clearly identified in all submitted files.** Material from assignments may appear on midterms and finals.

Every Tuesday this semester, except on holiday and exam days there will be a quiz on the previous week's material. The answer to the quiz will either be multiple choice, true-false, or a simple numeric answer that does not require a calculator. Each quiz is worth a maximum of 1pt with no partial credit being given. Out of 13 quizzes, I will keep the top 10 scores.

On Thursdays we will typically spend 15-20 minutes of class on an in-class exercise. You will be asked to post your solution to these exercises to the class discussion board. Doing so is worth 1 "insurance points" towards your grade. An "insurance point" can be used to get one missed point back on a midterm or final, up to half of that test's total score. For example, if you scored 0 on the midterm and have 10 insurance

points, you can use your insurance points, so that your midterm score is a 10. On the other hand, if you score 18/20 on the midterm, you can use at most 1 insurance point since half of what you missed (2pts) on the midterm is 1pt.

✔ Grading Information

HWs and Quizzes	40%
Midterm	30%
Final	30%
Total	100%

Criteria

Grades will be calculated in the following manner: The person or persons with the highest aggregate score will receive an A+. A score of 55 will be the cut-off for a C-. The region between this high and low score will be divided into 8 equal-sized regions. From the top region to the low region, a score falling within a region receives the grade: A, A-, B+, B, B-, C+, C, C-. If the boundary between an A and an A- is 85, then the score 85 counts as an A-. Scores below 55 but above 50 receive the grade D. Those below 50 receive the grade F.

🏛 University Policies

Per [University Policy S16-9 (PDF) (http://www.sjsu.edu/senate/docs/S16-9.pdf)](http://www.sjsu.edu/senate/docs/S16-9.pdf), 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 the [Syllabus Information (https://www.sjsu.edu/curriculum/courses/syllabus-info.php)](https://www.sjsu.edu/curriculum/courses/syllabus-info.php) web page. Make sure to visit this page to review and be aware of these university policies and resources.

📅 Course Schedule

Below is a tentative schedule:

1/22/26	Th	Overview - What is AI

1/27/26	Tue	Intelligent Agents - Uninformed Search
1/29/26	Th	Uninformed Search - cont. Coding
2/3/26	Tue	Informed Search
2/5/27	Th	Informed search cont. - Coding
2/10/26	Tue	Search in ComplexEnvironments
2/12/26	Th	Search in Complex Environments - Coding
2/17/26	Tue	Constraint Satisfaction Problems
2/19/26	Th	CSP Continued - Coding
2/24/26	Tue	Adversarial Search and Games
2/26/26	Th	Logical Agents
3/3/26	Tue	First Order Logic Logic
3/5/26	Th	Inference with FOL - Coding
3/10/26	Tue	Review of probabilities
3/12/26	Th	Review
3/17/26	Tue	Midterm
3/19/26	Th	Bayes Networks
3/24/26	Tue	Bayes Networks inference
3/26/26	Th	Decision Trees
3/31/26	Tue	Cesar Chavez Day - No class
4/2/26	Th	Spring Recess
4/7/26	Tue	MDPs

4/9/26	Th	Intro to ML
4/14/26	Tue	Feedforward Models
4/16/26	Th	FF models - cont.
4/21/26	Tue	Applications of DL models
4/23/26	Th	RL
4/28/26	Tue	NLP Models
4/30/26	Th	DL for NLP
5/5/26	Tue	Ethics in AI
5/7/26	Th	Review for Final Exam
5/12/26	Tue	Study Day - No exams
5/14/26	Th	Final Exam
5/15/26	Fr	Alternate Final Exam