San José State University
School/Department
CS 156-03, Introduction to Artificial Intelligence, Fall, 2021

Course and Contact Information

Instructor: Dr. Alpha Luk

Email: alpha.luk@sjsu.edu

Class Days/Time: M W: 19:30-20:45 PDT/PST

Classroom: Zoom:
https://sjsu.zoom.us/j/82399819254?pwd=Y051ZkYvZ3FUMnRYMzVNN1doWnVUUT09

Office Hours: Tuesdays 16:00-17:30 PDT/PST

Office Location: Zoom:

https://sjsu.zoom.us/j/87188769157?pwd=NWFUZUFYTnczZm9mbGc5ZzArdUpQQT09

Prerequisites: CS 146 and either CS 151 or CMPE 135 with a grade of C- or better in each

Course Format

This course will be taught online over Zoom. Course materials such as syllabus & assignments can be found on the Canvas Learning Management System course website at http://sjsu.instructure.com.

Course Description

Basic concepts and techniques of artificial intelligence: intelligent agents, problem solving, search, logic, knowledge representation, machine learning and natural language.

Course Learning Outcomes

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

1. Understand philosophical groundwork, history and trends in AI.
2. Understand the common AI techniques, their theoretical basis and how they are used in real world applications.
3. Apply the AI techniques and theories learnt to solve real world problems e.g. Building a classifier to determine how likely an email is spam.

Textbook

Artificial Intelligence: A Modern Approach. 3rd Edition. Stuart Russell and Peter Norvig ISBN: 9780136042594

Software

Python 3.7 or later available at https://www.python.org/downloads/release/python-374/
PyCharm Professional or Community Edition - recommended IDE

Course Requirements and Assignments

Homework Assignments:

Homework assignments will be posted and submitted on Canvas. For full credit, they must be submitted by the posted due date.

Exams:

We'll have 3 online exams in the semester, the last being the final exam.
The first two exams are scheduled during our regular class time:
Exam 1: Wednesday, September 22
Exam 2: Wednesday, October 27
Final exam: Monday, December 13, 19:45-22:00 PST

Grading Information

The final grade in the course will be calculated based on the following percentages:

Homework Assignments: 50%

Exam 1: 15%

Exam 2: 15%

Final Exam: 20%

Late Work:

Late assignments will not be accepted.

Grade Scale:

The letter grade will be determined based on the following scale:

A+ = 96% - 100% A = 91% - 95% A- = 86% - 90% B+ = 81% - 85% B = 76% - 80% B- = 71% - 75% C+ = 66% - 70% C = 61% - 65% C- = 56% - 60% D = 51% - 55%
F = below 50

Classroom Protocol

Regular attendance is an integral part of the learning process. Please arrive on time for the classes.

Students are not allowed to record without instructor permission

Students are prohibited from recording class activities, distributing class recordings, or posting class recordings. Materials created by the instructor for the course (syllabi, lectures and lecture notes, presentations, etc.) are copyrighted by the instructor. This university policy (S12-7) is in place to protect the privacy of students in the course, as well as to maintain academic integrity through reducing the instances of cheating. Students who record, distribute, or post these materials will be referred to the Student Conduct and Ethical Development office. Unauthorized recording may violate university and state law. It is the responsibility of students that require special accommodations or assistive technology due to a disability to notify the instructor.

University Policies

Per University Policy S16-9 *(http://www.sjsu.edu/senate/docs/S16-9.pdf)*, relevant information to all courses, such as academic integrity, accommodations, dropping and adding, consent for recording of class, etc. is available on Office of Graduate and Undergraduate Programs' Syllabus Information web page at http://www.sjsu.edu/gup/syllabusinfo/". Make sure to visit this page, review and be familiar with these university policies and resources.

CS156 Introduction to Artificial Intelligence, Fall 2021, Course Schedule

Please note that this schedule is subject to change with fair notice. Any changes will be announced in class and posted on the Canvas course site.

Course Schedule

Week	Date	Class	Topic	Reading	Assignment
1	Aug 23	1	What is AI?	1	
1	Aug 25	2	Rational Agents	2	Assignment #1 Due 9/4
2	Aug 30	3	Problem Solving and Search	3.1, 3.2 &3.3	
2	Sep 1	4	Uninformed Search Strategies	3.4	
3	Sep 6		Labor Day - No class		
3	Sep 8	5	Informed Search Strategies	3.5 & 3.6	
4	Sep 13	6	Local Search & Search in Non-Deterministic and Partially Observable Environments	4	Assignment #2 Due 9/25
4	Sep 15	7	Adversarial Search	5	
5	Sep 20	8	Constraint Satisfaction Problems 1	6.1, 6.2, 6.3	
5	Sep 22	9	Constraint Satisfaction Problems 2	6.4 & 6.5	
6	Sep 27		Exam 1		
6	Sep 29	10	Logical Agents	7	
7	Oct 4	11	First Order Logic	8	Assignment #3 Due 10/16
7	Oct 6	12	Inference in Propositional and First Order Logic	9	
8	Oct 11	13	Planning	10	
8	Oct 13	14	Knowledge Representation	12	
9	Oct 18	15	Modeling Uncertainty	13	
9	Oct 20	16	Bayesian Network	14.1, 14.2 & 14.3	Assignment #4 Due 11/6
10	Oct 25	17	Inference in Bayesian Network	14.4 & 14.5	
10	Oct 27	18	Temporal Probability Model	15	

11	**Nov 1**	**19**	**Rational Decision**	16	
11	**Nov 3**		**Exam 2**		
12	**Nov 8**	**20**	**Learning by Example and Decision Trees**	18.1-18.4	
12	**Nov 10**	**21**	**Statistical Learning**	20	**Assignment #5** **Part A Due 11/13** **Part B Due 11/27** **Part C Due 12/4**
13	**Nov 15**	**22**	**Regression, Linear Models and Neural Networks**	18.6 & 18.7	
13	**Nov 17**	**23**	**Nonparametric Models and Ensemble Learning**	18.8 & 18.10	
14	**Nov 22**	**24**	**Natural Language Processing**	22	
14	**Nov 24**		**Thanksgiving - No Class**		
15	**Nov 29**	**25**	**Natural Language Understanding**	23	
15	**Dec 1**	**26**	**Ethics of AI**	**26**	
16	**Dec 6**	**27**	**Review**		
Final Exam	**Dec 13**		**Final Exam**		