CSE 511A: Introduction to Artificial Intelligence (Spring 2020)

Instructor	Professor Roman Garnett (garnett)
TAs	TBD,
Time/Location	Monday/Wednesday 2:30–4pm, Steinberg 105
Office Hours (Garnett)	Wednesday after class, Steinberg 105
Office Hours (TAs)	TBA
URL	http://cse.wustl.edu/~garnett/cse511a/
Piazza message board	http://piazza.com/wustl/spring2020/cse511a/home/

Course Description

The discipline of artificial intelligence (AI) is concerned with building systems that think and act like humans or rationally on some absolute scale. This course is an introduction to the field, with special emphasis on sound modern methods. The topics include knowledge representation, problem solving via search, game playing, logical and probabilistic reasoning, planning, machine learning (decision trees, neural nets, reinforcement learning, and genetic algorithms) and machine vision. Programming exercises will concretize the key methods. The course targets graduate students and advanced undergraduates. Evaluation is based on programming assignments, a midterm exam, and a final exam.

Prerequisites

If you are unsure about any of these, please send the instructor a message on Piazza:

- CSE 132, CSE 240, and CSE 247, or permission of the instructor.
- Knowledge of Python. This will be *critical* to complete the programming assignments.
- Basic knowledge of statistics, probability theory, and first order logic.

Book

The book is Russell and Norvig, *Artificial Intelligence: A Modern Approach.* Either the second or third edition is fine. This is a classic textbook and is strongly recommended. I will suggest readings from this book for every lecture.

A good reference for reinforcement learning is Sutton and Barto, *Reinforcement Learning: An Introduction.* This book is available online and I might suggest reading from it as well.

Assignments

The assignments for this course are a progression of Python programming assignments related to the classic game Pac-Man. The assignments will be automatically graded, and a dynamic scoreboard will (anonymously) show your standing on each assignment compared with your peers. You may find information related to interacting with the autograder on the website.

The assignment schedule will be kept up-to-date on the webpage.

Late policy

Assignments will be due at the beginning of class on the due date. I will allow you to turn in your assignment up to one class late with no penalty. After that, it will no longer be accepted under any circumstance.

Collaboration policy

You may work on the assignments in pairs if you prefer. If you choose to work with someone, please be sure to indicate this via the `partners.txt` file in your Subversion repository.

Examinations

There will be a midterm held in class on **Wednesday, March 4.** This will count for 25% of your grade. A second noncumulative exam will be held in class on **Wednesday, April 22.** This will count for another 25% of your grade. There will be no final exam.

Special accommodation for examinations will not be given for attending job interviews or flying home early. I understand that you may decide to miss class for these reasons, but you will need to weigh the consequences when making such a decision.

Grading

Your final grade will consist of the following weighted components:

component	%
programming projects	50%
midterm	25%
final exam	25%

I will determine grade boundaries based on the distribution of final weighted grades. In the past few years, these grade boundaries have corresponded to traditional ones ($\geq 93\% = \mathrm{A}$, $\geq 90\% = \mathrm{A}-$, $\geq 87\% = \mathrm{B}+$, etc.).