Computer Science 188 Syllabus

UC Berkeley Department of Electrical Engineering and Computer Science

Course Title: Introduction to Artificial Intelligence

Units: 4 (See this page for how UC Berkeley units are computed.)

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Disclaimer

This PDF syllabus is provided for students who need a paper copy of the syllabus (e.g. exchange students who need a syllabus for their home university).

The most up-to-date content is on our course website: https://inst.eecs.berkeley.edu/~cs188.
In cases of dispute, the course website takes precedence.

Course Overview

Catalog Description: Ideas and techniques underlying the design of intelligent computer systems. Topics include search, game playing, knowledge representation, inference, planning, reasoning under uncertainty, machine learning, robotics, perception, and language understanding.

Course prerequisites: The prerequisites are recommended but not formally enforced.

- CS 61A (Structure & Interpretation of Computer Programs) or CS 61B (Data Structures)
- CS 70 (Discrete Mathematics and Probability Theory) or Math 55 (Discrete Mathematics)

Course restrictions: Course is not repeatable for credit.

Instruction Methods

Lecture: The course has 3 hours of lecture per week. See https://classes.berkeley.edu for the exact time/location. Lectures will be recorded and recordings will be posted. Lecture attendance is not taken.

Discussion sections: TAs teach weekly 1-hour discussion sections. See https://inst.eecs.berkeley.edu/~cs188 for the times/locations. You can attend any discussion sections you want. Discussions are optional and discussion attendance is not taken.

Course Readings

The official textbook for the course is *Artificial Intelligence: A Modern Approach, 4th US ed.* (AIMA), by Russell and Norvig.

We also have an unofficial CS188 textbook written by former TAs.

Grading

We will compute grades from a weighted average, as follows:

- Projects (25%)
- Homeworks (20%)
- Midterm (20%)
- Final Exam (35%)

Grades are assigned according to these bins:

Course Points	Grade
[85, 100]	A
[80, 85)	A-
[75, 80)	B+
[70, 75)	B
[65, 70)	B-
[60, 65)	C+
[55, 60)	C
[50, 55)	C-
[45, 50)	D+
[40, 45)	D
[35, 40)	D-
[0, 35)	F

Weekly Class Schedule

For exact dates for the current semester, see https://inst.eecs.berkeley.edu/~cs188.

Week	Lecture	Readings	Assignments
1	Introduction to AI	AIMA 1–2	HW 0
	Uninformed Search	AIMA 3.1–3.4	
2	A* Search and Heuristics	AIMA 3.5–3.6	HW 1
	Constraint Satisfaction Problems I	AIMA 6.1	
3	Constraint Satisfaction Problems II	AIMA 6.2–6.5	HW 2, Project 1
	Game Trees I	AIMA 5.2–5.5	
4	Game Trees II	AIMA 16.1–16.3	HW 3
	Markov Decision Processes I	AIMA 17.1–17.2	
5	Markov Decision PRocesses II	AIMA 17.1–17.2	HW 4, Project 2
	Reinforcement Learning I	AIMA 22	
6	Reinforcement Learning II	AIMA 22	HW 5
	Probability	AIMA 12.1–12.5	
7	Bayes Nets: Representation	AIMA 13.1–13.3	HW 6, Project 3
	Bayes Nets: Independence	AIMA 13.2	
8	Bayes Nets: Inference	AIMA 13.3	Midterm
	Bayes Nets: Sampling	AIMA 13.3–13.4	
9	Spring Break or Thanksgiving Break	N/A	
10	Decision Networks and VPI	AIMA 16.5–16.6	HW 7
	Hidden Markov Models	AIMA 14.3–14.5	
11	Particle Filtering	AIMA 14.3	HW 8, Project 4
	Machine Learning: Naive Bayes	AIMA 20.1–20.2	
12	Machine Learning: Perceptrons	AIMA 19.6	HW 9
	Machine Learning: Neural Networks	AIMA 19.7	
13	Machine Learning: Decision Trees	AIMA 19.3	HW 10, Project 5
	Special Topics / Guest Lecture	N/A	
14	Special Topics / Guest Lecture	N/A	Final exam
	Summary	N/A	

Descriptions of Assignments

Projects: See this page for descriptions of the projects and links to assignment specs.
https://inst.eecs.berkeley.edu/~cs188/sp25/projects/

Homeworks: To view the homeworks, use the Gradescope join code here:
https://inst.eecs.berkeley.edu/~cs188/sp25/policies/#homeworks

Exams: There is a 2-hour midterm halfway through the semester, and a 3-hour final exam at the end of the semester. Both are paper exams.
To view past exams, see: https://inst.eecs.berkeley.edu/~cs188/sp25/resources

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