

CS 431: Introduction to Artificial Intelligence

Professor	Adam A. Smith aasmith@pugetsound.edu http://mathcs.pugetsound.edu/~aasmith	Thompson 390E Office Hours MW 12-1, Th 3-4 x3557
Meeting Times	MWF 2:00-2:50. The final will be on Wednesday, December 16th at 4:00.	
Course Description	<p><i>Artificial Intelligence.</i> The term conjures images of science fiction stories; of dystopian worlds with evil robot overlords, or beneficent android companions who will help us as society evolves.</p> <p>However state-of-the-art AI is a little less dramatic. Modern AI is more concerned with pattern recognition and data mining. Computers such as Deep Blue and Watson have made headlines by competing against humans in games. However other tasks are also considered to be AI, such as recommending a movie or book that you'll like, predicting whether or not you're a terrorist from your cell phone records, and data-mining your social network accounts to determine your insurance premiums.</p> <p>We will be using the Java programming language (with which most of you are already familiar). You may if you wish use a different language such as C++ or Python. There will also be some work in Prolog, which is a programming language made to represent logic problems.</p>	
Topics Covered (“Learning Outcomes”)	<p>The class will start with an overview of AI research, and from there we will delve into intelligent searching, and other topics, including:</p> <ul style="list-style-type: none">• Search algorithms.• Playing games.• Logic & knowledge representation.• Machine learning & data mining.• Natural language processing.	
Web Page	The class web page will be located at http://mathcs.pugetsound.edu/~aasmith/cs431/ . Valuable info and links will be posted there.	
Text	The text we will use is “Artificial Intelligence: A Systems Approach” by M. Tim Jones.	
Prerequisites	The prerequisite for this class is that you have passed CSCI 361 (“Algorithms and Data Structures”) or its equivalent. You may also take this class concurrently. If you have not, please see me ASAP.	
Course Policies	<p>There will be four or five assignments over the course of the class—one every two or three weeks. You are free to talk to others in the class about them, but I expect what you finally turn in to be <i>100% your own work</i>. Assignments will be penalized by 20% for each working day (or fraction thereof) they are late, down to 40%. However, you will have five “extension days” during the semester to extend a deadline by one working day. They will be used automatically, unless you specify otherwise.</p> <p>There will also be a final project, in which you will explore some area of the class more deeply. You may work in pairs for this if you wish, but expectations will be substantially higher.</p>	

You all should be aware of the Honor Code at the college. Please do not cheat—it will not go well for you. *Any suspected cheating will be immediately reported.*

Exams are closed book, but you are allowed a calculator (or your phone, so long as it is in “airplane mode”) and one two-sided, letter-sized page of notes.

Grading

Final grades will be determined as follows:

Assignments	Project	Midterm 1	Midterm 2	Final
25%	10%	20%	20%	25%

In particular, notice that how heavily weighted assignments are. *Missing just one assignment will result in a substantially lowered grade.* Please be sure you do them, and on time.

Exams will be cumulative, and given in the evening. They will be graded on a curve, with each score divided by the high score. In addition, class participation and effort may help bump you up, if your final grade is borderline.

Attendance

I will not be keeping attendance (except on the first day, to make sure that you are properly enrolled). However, odds are that your attendance will correlate highly with your final grade.

Boilerplate

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact Peggy Perno, Director of the Office of Student Accessibility and Accommodations, Howarth 105, pperno@pugetsound.edu, 253.879.3395. She will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Please review university emergency preparedness, response procedures and a training video posted at www.pugetsound.edu/emergency. There is a link on the university home page. Familiarize yourself with hall exit doors and the designated gathering area for your class and laboratory buildings. If building evacuation becomes necessary (e.g. earthquake), meet your instructor at the designated gathering area so she/he can account for your presence. Then wait for further instructions. Do not return to the building or classroom until advised by a university emergency response representative. If confronted by an act of violence, be prepared to make quick decisions to protect your safety. Flee the area by running away from the source of danger if you can safely do so. If this is not possible, shelter in place by securing classroom or lab doors and windows, closing blinds, and turning off room lights. Lie on the floor out of sight and away from windows and doors. Place cell phones or pagers on vibrate so that you can receive messages quietly. Wait for further instructions.

Miscellany

If there are any special holy days that you will be taking off, please let me know as soon as you can so that we can work around them.

Please consider getting a flu shot. Influenza kills, and disease can spread rapidly in the dorms. (And you really don't want to miss a week of class. Trust me.)

Finally...if there's anything else I can do to help you, please let me know. I'm willing to go out of my way to make this a valuable class for you, but I can't do that unless you talk to me.

I hope we have a good semester!