CSE 327. Artificial Intelligence: Theory and Practice
Spring 2018

Professor Jeff Heflin

Course Description:
This course will provide a general introduction to Artificial Intelligence (AI). We will discuss what AI is, survey some of the major results in the field, and look at a few promising directions. In particular, we will seek answers to questions such as:
- how do you represent and reason with general-purpose knowledge?
- how can a robot or artificial agent formulate a plan to achieve a task?
- how can an agent make good decisions given uncertainty about its environment?
- how can an agent learn in order to improve its behavior or cope with unanticipated situations?

Course Web Page:
http://www.cse.lehigh.edu/~heflin/courses/ai/

Prerequisites:
(CSE 1 and 2) or CSE 17. CSE 261/Math 261 is recommended as a corequisite or prerequisite.

Time and Location:
TTh 1:10-2:25pm, Neville 2

Textbook:
Russell, Stuart and Peter Norvig, Artificial Intelligence: A Modern Approach *(third edition)*. Prentice-Hall, New Jersey, 2010. ISBN 0-13-604259-7

	Instructor	**Teaching Assistant**
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Office Hours:	M 2-3:30pm, Th 10-11:30am and by appointment	T 3-5pm, F 10am-12pm
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Academic Integrity:
All graded work is expected to be your own, unless the instructor has authorized collaboration in writing. In particular, you are not allowed to ask anyone but your professor for specific help with your homework assignments. However, you are free to discuss the topics and concepts of the course with your classmates, as long as you do not discuss the specifics of any assignment. If you are unsure if a particular form of aid is allowed, then check with the professor first. Violation of this policy could result in failure of the course.

Grading:
The breakdown for your assignments and exams are as follows:

Homework (7)   35%
Midterm   25%
Final   40%

I will use the following base scale for assigning letter grades. Note, for the purposes of this scale, all fractional grades are rounded down.

92-100:	A	82-87:	B	72-77:	C	62-67:	D
90-91:	A-	80-81:	B-	70-71:	C-	60-61:	D-
88-89:	B+	78-79:	C+	68-69:	D+	0-59:	F

This scale gives the minimum grade you could receive for a given score. Depending on the performance of the entire class, I may adjust the scale so that you will receive a higher grade.

Late Work Policy:
Late work will be docked one letter grade (10% of its total value) for each 24 hour period that it is late. No work will be accepted more than five days late. Exceptions will only be granted if an extenuating circumstance can be proven to the instructor's satisfaction.

Schedule:
This class schedule is only a rough guideline and may change depending on the pace at which we complete the material. All reading and homework assignments will be announced both in class and on the course web page.

Starting	Lectures	Topic	Reading
Jan. 23	3	Introduction and agents	Ch. 1, 2
Feb. 1	2	Search	Ch. 3
Feb. 8	2	Game playing	Ch. 5
Feb. 15	3	First-Order Logic	Ch. 8
Feb. 27	2	Reasoning, incl. Prolog	Ch. 9
Mar. 6	1	Knowledge representation	Ch. 12
Mar. 8	1	**Midterm**	
Mar. 12	n/a	*Spring break: March 12 – 16*	
Mar. 20	4	Planning	Ch. 10, 11
Apr. 3	4	Uncertainty	Ch. 13 - 16
Apr. 17	5	Machine learning	Ch. 18 –20
May 3	1	Selected Topics and Review	*n/a*

Accommodations for Students with Disabilities:
If you have a disability for which you are or may be requesting accommodations, please contact both your instructor and the Office of Academic Support Services, Williams Hall, Suite 301 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accommodations can be granted.

The Principles of Our Equitable Community:
Lehigh University endorses The Principles of Our Equitable Community [http://www.lehigh.edu/~inprv/initiatives/PrinciplesEquity_Sheet_v2_032212.pdf]. We expect each member of this class to acknowledge and practice these Principles. Respect for each other and for differing viewpoints is a vital component of the learning environment inside and outside the classroom.

Course Learning Outcomes:
As a result of this course, students will enhance their ability to:
- Apply knowledge of data structures
- Design algorithms and apply knowledge of complexity
- Apply mathematics to CS problems