

# CSE 327. Artificial Intelligence: Theory and Practice

Spring 2005

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 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 15 or 17. CSE 261/Math 261 is recommended as corequisite or prerequisite.

## Time and Location:

MWF 9:10-10:00am, Packard Lab 258

## Textbook:

Russell, Stuart and Peter Norvig, *Artificial Intelligence: A Modern Approach (second edition)*. Prentice-Hall, New Jersey, 2003. ISBN 0-13-790395-2

	<b>Instructor</b>	<b>Teaching Assistant</b>
<b>Name:</b>	Jeff Heflin	Hua Jiang
<b>E-mail:</b>	heflin@cse.lehigh.edu	huj2@lehigh.edu
<b>Office:</b>	Packard Lab 330	Packard Lab 112A
<b>Office Hours:</b>	Mon. 10-11am, Wed. 2-3pm, Thr. 2-3pm	Tue. 10am-12pm
<b>Phone:</b>	610-758-6533	

## 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.

## Academic Integrity:

All graded work is expected to be your own, unless your professor has authorized collaboration in writing. In particular, you are not allowed to ask anyone but the instructor or TA for 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. Any violation of this policy could result in failure of the course.

**Grading:**

Homework	50%
Midterm	20%
Final	30%

Below is the base grading scale I will use. For each possible overall score, the minimum grade you could receive is given. Depending on the performance of the entire class, I may adjust the scale so that you will receive a higher grade. Note, for the purposes of this scale, all fractional grades are rounded down.

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

**University Policy on Disabilities:**

If you have a disability for which you are or may be requesting accommodations, please contact your professor and the Office of Academic Services, Room 212, University Center or call (610-758-4152) as early as possible in the semester. University policy states that you must notify your professor seven (7) days prior to the exam.

**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.

Week of	Topic	Reading
1/17	Introduction and agents	Ch. 1,2
1/24	Search	Ch. 3,4
1/31	Game playing	Ch. 6
2/7	Logic	Ch. 7, 8
2/14	Logic and Prolog	Ch. 8, 9
2/21	Knowledge representation	Ch. 10
2/28	Planning <b>Midterm on 3/2</b>	Ch. 11
3/7	<i>Spring break – No class</i>	
3/14	Planning and acting	Ch. 11, 12
3/21	Uncertainty	Ch. 13, 14
3/28	Probabilistic reasoning for agents	Ch. 15, 16
4/4	Machine learning	Ch. 18, 19
4/11	Neural networks	Ch. 20
4/18	Natural language processing	Ch. 22
4/25	Advanced topics and review	Ch. 26, 27