

# CS 460/660/760 Artificial Intelligence

## Fall 2009 Syllabus

### Instructor:

- [Thamar Solorio](mailto:solorio@uab.edu), solorio @ uab.edu  
Office hours: MF 12:30-1:45pm or by appointment, in CH 113.

### TA:

- Ritu Ritu, [ritu@cis.uab.edu](mailto:ritu@cis.uab.edu)  
Office hours: T 6:00-8:00pm in CH 154.

### Lecture sections:

- TR 12:30-1:45, Room CH 274

Class web site: <http://www.cis.uab.edu/solorio/cs460fa09.html>

### Course Description:

“Artificial Intelligence is the study of how to make computers do things at which, at the moment, people are better” (Rich and Knight, 1991). In this course we will look at what those things are, why they are hard for computers, what techniques we do have available for getting computers to do them, and what the future seems likely to hold.

### Textbook:

Reading and some of the assignments will be drawn from *Artificial Intelligence: A Modern Approach, Second Edition*, by Stuart Russell and Peter Norvig. You are required to obtain this book for use in this course. Note that photocopied textbooks are a violation of copyright law.

### Prerequisites:

Minimum "C" grade in CS 350 Automata and Formal Language Theory and CS 302 Object-Oriented Design.

### Policies and Other Information

Students are required to check their UAB email and visit the announcements section of the class web site on a daily basis. Official announcements for the class will be made through these channels.

### Grading:

Final grades will be based on a combination of projects, homework assignments, in-class attendance and performance, two midterm exams and a final comprehensive exam. The approximate percentages are as follows:

- 25% - Homework and projects
- 15% - Final Project
- 5% - In-class participation, exercises, and quizzes
- 15% - Midterm 1 (Thursday, September 24, 2009)

- 15%- Midterm 2 (Tuesday, October 27, 2009)
- 25%- Final exam (December 10, 2009)

Additionally, any one of the following will result on a final grade of F, even if the overall average is greater than 60%.

- Obtaining an average of less than 60% on the homework and projects
- Missing more than five lectures

There will be differences between the 460 and 660/760 versions of the homework, projects, and exams. Lowest homework grade will be dropped. Homework is due at the beginning of the class.

The nominal percentage-score-to-letter-grade conversion is as follows:

- 90% or higher is an A
- 80-89% is a B
- 70-79% is a C
- 60-69% is a D
- below 60% is an F

We reserve the right to adjust these criteria downward, e.g., so that 88% or higher represents an A, based on overall class performance. The criteria will not be adjusted upward, however.

#### **Late Projects and Homework:**

Projects up to three days late will receive up to 70% percent of full credit, and more than three days late will receive no credit. Homework up to a day late will receive up to 80% of full credit, and it will not be accepted after that. All homework and projects are due at the beginning of the class period. **Note:** final projects and presentations will not be accepted after the due date.

#### **Makeup Policy:**

Midterm exams can be made up if missed due to an emergency, upon satisfactory proof of the emergency. The final exam cannot be made up. The final exam cannot be offered to students early (e.g., for Christmas travel).

#### **Collaboration:**

Discussion of homework and projects among students is encouraged, but your answers and your code should be written and tested by you alone. **Do not exchange programs or let someone look at your code or solutions, even if "just so they can see how you did it."** If you need help, consult the instructor or the TA.

#### **Standards of Conduct and Academic Dishonesty:**

You are expected to conduct yourself in a professional and courteous manner, as prescribed by the UAB Conduct Honor Code. Academic dishonesty includes but is not limited to abetting, cheating, plagiarism, fabrication and misrepresentation. *Abetting* involves collaborating with another person to commit an academically dishonest act, for instance allowing another student to copy your homework or present your work as their own. *Cheating* may involve copying from another student, or possessing unauthorized materials during a test. *Plagiarism* occurs when someone represents the work or ideas of another person as his/her own. *Fabrication* is the act of presenting falsified data as genuine. Examples of *misrepresentation* include falsifying data (for example program outputs) in laboratory reports or projects.

Any violation of the UAB Conduct Honor Code will result in a grade of 0 for the given assignment or exam and possible failure of the course.

**Disabilities:** If you feel that you may have a disability that requires accommodation, contact the Disability Support Services Office at (205) 934-4205, go to 516 Hill University Center, or email [dss@uab.edu](mailto:dss@uab.edu)

### Tentative Class Schedule

Date	Topic	Readings	Assignment
Aug 18	First meeting	R&N 1.1	
Aug 20	Intelligent Agents and Search algorithms for problem-solving I	R&N 2, 3.1-3.4	Hw 1 due Aug 27
Aug 25, 27, Sept 1	Search algorithms for problem-solving II	R&N 4.1, 4.3, 4.4, 6.1-6.5	Hw 2 due Sept 8, Project 1 due Sept 22
Sept 3, 8, 10, 15	Logical agents	R&N 7.1-7.4, 7.7, 8, 9	Hw 3 due Sept 22
Sept 17	Review on probability	R&N 13.1-13.6	Hw 4 due Sept 24
Sept 22	Review for mid-term exam		
Sept 24	<b>First Mid-Term Exam</b>		
Sept 29, Oct 1	Reasoning under uncertainty	R&N 14.1-14.4	
Oct 6, 8	Hidden Markov Models	R&N 15.1-15.3	Hw 5
Oct 13, 20	Machine learning I	R&N 18	Hw 6
Oct 22	Review for 2 <sup>nd</sup> mid-term exam		
Oct 27	<b>Second Mid-Term Exam</b>		
Nov 3,5	Reinforcement learning	R&N 17.1-17.3, 21	Hmw 7
Nov 10, 12	Machine Learning II	R&N 20	
Nov 17, 19	Natural Language Processing	R&N 22, 23	Hmw 8
Nov 24	Vision	R&N 24	
Dec 1	The future of AI		
Dec 3	Final project presentations		Final Project due
Dec 10	<b>Final Exam</b>		