

# Artificial Intelligence CS494/594, Section 3 Syllabus

**Fall 2009**

**Claxton 205, Tuesday/Thursday, 12:40-1:55PM**

**Class web page: <http://web.eecs.utk.edu/~parker/Courses/CS594-fall09>**

**Instructor:** Prof. Lynne E. Parker

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*Office Hours:* Tuesday/Thursday, 11-12PM and 2-3PM, or drop by any time I'm in my office, or schedule an appointment by email.

**TA:** Nick Overfield

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*Office Hours:* Monday/Wednesday, 2:00 – 3:30PM

## **Course Description:**

This course on Artificial Intelligence (AI) covers the breadth of the field of AI, including topics such as problem-solving, logic, planning, reasoning, learning, perception, and robotics.

## **Prerequisites:**

Familiarity with basic concepts of computer science (algorithms, data structures, and complexity) and mathematical maturity commensurate with the successful completion of CS380 or its equivalent.

## **Required Textbook:**

*Artificial Intelligence: A Modern Approach*, 2<sup>nd</sup> Edition, by Russell and Norvig, Prentice Hall, 2003.

## **Schedule and Assigned Readings:**

Refer to the course website for lecture schedule and reading assignments.

## **Evaluation:**

Grading will be based on homework/lab assignments and 3 in-class exams, as follows:

**Homework/Lab Assignments:** 55%  
**3 exams (15% each):** 45%

Different assignments and exams will be given to those taking the class for undergraduate credit (CS494), compared to graduate credit (CS594). In grading the homeworks and exams, the quality of the work expected is higher for graduate students than for undergraduates, and thus the graduate student work will be graded more strictly.

Final grades will be determined by overall average as follows:

A:	90 – 100	C+:	75 – 79.9
B+:	85 – 89.9	C:	70 – 74.9
B:	80 – 84.9	D:	60 – 69.9
		F:	0 – 59.9

Decisions on borderline grades will be based upon exceptional class attendance and participation.

The instructor reserves the right to curve grades upward, if deemed appropriate by the instructor, based on overall class grade distribution. The curving of grades will take place on two separate scales – one for graduate students and the other for undergraduate students.

### **Class Policies:**

- Class attendance: Class attendance will be taken. Decisions on borderline grades will be based upon exceptional class attendance and participation, as deemed merited by the course instructor. Of course, if you have a good reason to miss class (e.g., you are sick, or you need to present a paper at a research conference, or you have a job interview, etc.), then it is not a problem. Just let the instructor know as soon as you know you will need to miss class. Please don't come to class if you think you have a contagious illness. We will work with you to help keep you posted on class activities and material covered. In any case, it is your responsibility to catch up (or keep up) with all course material and announcements covered in class.
- Announcement responsibilities: Important announcements, schedule revisions, etc., may be made in class or posted to the class email list. You are responsible for all announcements.
- Homework/lab assignments: Homework/lab assignments will be handed out in class and posted on the course web site. They will consist of problems to be solved, and/or programming assignments.
- Due dates and late homeworks:
  - One (1) homework may be turned in up to 4 days late and still receive full credit. I strongly encourage you to save this late homework for a personal emergency that might arise during the semester. Don't use it just because you've procrastinated.
  - All homeworks turned in more than 5 minutes after the due date and time will immediately be given a grade of zero, with no exceptions. Please don't test me on this. I really mean it.
- Collaboration policy: Discussion of course topics with other students in the class is encouraged. Feel free to form study groups if you like. You may also discuss general approaches to homework and lab assignments, share ideas and thoughts, and assist each other in understanding the material. However, your homework and lab submissions must be your own work based primarily on your own individual effort. You may not copy directly from others or seek solutions on the internet or from others, unless specifically directed to do so. Except if specifically allowed by the instructor, copying from any outside sources (e.g., fellow students, Internet, etc.) on any material to be graded is not permitted, and will be considered cheating. Of course, there will be no collaboration on exams. Cheating will be dealt with harshly, and may result in failure of the assignment/exam and/or failure of the class. Each student is responsible for securing his or her work from copying. Each student is expected to abide by UT's policies on Academic Conduct and the Honor Statement. Refer to the University of Tennessee Undergraduate Catalog and the HillTopics Student Handbook for more details.
- Exams: The exams will be in-class, open book, open notes. Each exam will focus on material covered since the last exam, although it is expected that you also remember the material from earlier in the class.
- Grading corrections: Bring any grading correction requests to the instructor or TA within 1 week of receiving the grade, or before the end of the semester, whichever comes first. After that, your grade will not be adjusted. If you find any mistake in grading, please let the instructor or TA know. Your grade will not be lowered.
- Schedule and readings: The schedule for each class will be posted on the class web site, along with relevant readings for each topic. You are expected to keep up with the readings as we go, as they will help provide the foundation for completing your assignments.

**Topics we expect to cover this semester:**

- Introduction to AI and Intelligent Agents
- Problem solving by search
  - Heuristic search
  - Constraint satisfaction
  - Adversarial search (games)
- Knowledge and reasoning
  - First order logic
  - Knowledge representation
- Planning systems
- Dealing with uncertainty
  - Probabilistic reasoning
- Learning
  - Basic concepts
  - Knowledge in learning
  - Sampling of some learning techniques
- Natural language
- Perception and robotics
- Philosophical issues