CS 4804: Introduction to Artificial Intelligence/Fall 2006

The goal of CS 4804 is to provide an overview of the AI areas of search, problem solving, knowledge representation, uncertain reasoning, and learning. The emphasis of the course will be on showing how a small core of AI techniques can be used in a variety of practical applications.

Meeting Times	MW 2:30-3:45pm, Davidson 307
Instructor	Naren Ramakrishnan, 1-8451, Torg 2160L
	naren@cs.vt.edu, http://www.cs.vt.edu/∼naren
Office Hours	Tuesdays 1-5pm, or walk in any time.
Teaching Assistant	Michael Narayan
	mnarayan@vt.edu
Office Hours	Thursdays, Fridays, 10am-12pm, McB 133A
Listserv	CS4804_91690@listserv.vt.edu
	(yes, the name is rather long winded.)
Course Web Page	http://courses.cs.vt.edu/∼cs4804

If you are unable to make the above times and need to meet with us, you can setup an alternative time via email. If you need adaptations or accommodations because of a disability (learning disability, attention deficit disorder, psychological, or physical), if you have emergency medical information to share with the instructor, or if you need special arrangements in case the building must be evacuated, please meet with the instructor ASAP.

Pre-requisites: The pre-requisite CS 2604 will be rigorously enforced. No exceptions. In addition, you are expected to have basic knowledge of probability, statistics, and must not be averse to math. Experiences in courses such as CS 4604 (database systems), CS 3414 (numerical methods), and CS 4104 (algorithms) will be beneficial.

Evaluation: There will be about eight homeworks, which will involve a mix of theoretical problems, programming assignments, and questions that will focus on your (surprise!) writing skills. The topical content of the homeworks will usually be language-independent, so you will be free to use your favorite platform/language. Some ideas though are best demonstrated using problem solving environments such as MATLAB, so we will often provide MATLAB code for some algorithms.

No late submissions will be accepted. There will be a midterm exam (closed book and closed notes). There is no final exam, but a bumper programming project for the last two weeks. Detailed breakdown: homeworks (50%), midterm exam (20%), final project (30%).

All assignments are designed by the instructor. In addition, the instructor grades the midterm exam individually. The homeworks and final project are graded by the teaching assistant. If you have an exam or homework that you feel has been graded incorrectly, please contact us, and we can discuss a re-grading if appropriate.

Keeping in Touch: Please use the listserv actively for discussions and exchanging ideas. Since it is created automatically by a central university system, any student registered in CS 4804 will be added to the mailing list. If you do not receive a test mail from the instructor by the end of the first week of classes, ensure that your email address is properly recorded in the university system.

Workload: The course moves at a very fast pace! The course will appear deceptively simple but, unless you start early, you will be unable to complete the homeworks. Most homeworks involve a fair amount of design, so plan your schedule accordingly.

Electronic Accounts and Programming: You are expected to have accounts on the CS undergraduate lab network or some other equivalent facility. Familiarity with high-level programming is expected, in an operating system of your choice. You are also expected to be a good coder, and to choose appropriate data structures and algorithm design strategies. Programs in AI can get unwieldly and sound choice of data structures can be useful in completing the homeworks.

Book: You are fortunate (I was not) to be studying AI at a time when Russell and Norvig's Classic AIMA book is available. This will be the required textbook. It is broad in coverage and will be a useful addition to your library, even if you decide to drop this course. We will follow a suggested sequence from the book covering the topics of problem solving, search, reasoning, uncertain reasoning, and learning. Make sure you get the **second** edition of AIMA, not the first! For your ease of spotting, the book jacket is in green color, not red.

The full publishing details can be given as: [AIMA] Stuart Russell and Peter Norvig, *Artificial Intelligence: A Modern Approach*, Prentice Hall, Upper Saddle River, NJ, Second Edition, 2003. The authors are world famous in AI and maintaing a webpage for the book at: http://aima.cs.berkeley.edu/.