

CS 5233 Syllabus – Fall 2007

Artificial Intelligence

This course studies the area of artificial intelligence from the standpoint of a general problem solving technique. Major topics covered include methods of search and knowledge representation. 3 hours credit. Prerequisites: CS 3343. The objectives of this course are to give you an understanding of the fundamental concepts of AI and how they are realized by computer programs.

Instructor

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Office Hours: Tuesday 2-3pm, Thursday 1-2pm, Friday 10-11am, or by appointment

Books

Required: S. Russell and P. Norvig, *Artificial Intelligence: A Modern Approach*, Second Edition, Prentice Hall, 2003.

Grading

Homework	20%
Programming Labs	30%
Midterm	20%
Final Exam	30%

Labs may be handed in late by the next class session with a 10% penalty.

Assignments

Short homeworks will be assigned regularly and normally will be due within one week. 2 homeworks will be dropped from the grade. Late homeworks are accepted at the whim of the instructor.

There will be a series of lab assignments in this course, which will emphasize the programming of “intelligent agents.” An intelligent agent is defined circularly as a program that behaves intelligently in its environment. The interaction between agents and environments will be simulated by computer processes. An agent will interact with an environment via its standard input and standard output. I would prefer that agents be programmed in C; check with me about other programming languages. You need to have an account on the Computer Science network; all students registered in this course should already have an account created for them.

All assignments will be handed in electronically by using WebCT (<http://webct.utsa.edu>).

Attendance and Participation

Regular class attendance per se is not required, but note that the homeworks, labs, and exams will be partly based on the lectures. Make-up exams are permitted as long as it's a reasonable excuse, you inform me in a timely fashion, and you document the excuse.

Tentative Schedule

<u>Day</u>	<u>Topic</u>	<u>Reading</u>	<u>Assignment</u>
Aug. 22	Intelligent Agents	§2,§1.1	Lab 1 Assigned
27	Search	§3	
29	Analysis of Blind Search	§3	
Sept. 5	Informed Search	§4	
10	Analysis of A* and Hill Climbing	§4	
12	Game Playing	§6	
17	Analysis of Game Playing	§6	
19	Propositional Logic	§7	
24	Inference Rules	§7	
26	First-Order Logic	§8.1-3,9.1	Lab 1 Due Lab 2 Assigned
Oct. 1	Unification, Resolution	§9.2,9.5	
3	Analysis of Resolution	§7.5	
8	Midterm		
10	Midterm Results		
15	Probability	§13	
17	Bayesian Networks	§14	
22	Bayesian Networks	§14	
24	Learning from Observations	§18	
29	Learning from Observations	§18	
31	Naive Bayes	§20.2	Lab 2 Due Lab 3 Assigned
Nov. 5	Neural Networks	§20.5	
7	Planning	§11	
12	Planning	§11	
14	Natural Language Processing	§22	
19	Natural Language Processing	§22	
21	Perception	§24	
26	Perception	§24	
28	Review		Lab 3 Due
Dec. 5	Final Exam: Wednesday 5:00 to 7:30pm		