EE 5714
(Formerly EE 555)
Introduction to Intelligent Systems

Dr. Brian P. Butz **Fall 2007**
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Office Hours:, W:10:00-12:00, Th: 12:30-1:30

The purpose of this course is fourfold:

1) to give the student an overview of what artificial intelligence is and its current state;
2) to give the student an overview of intelligent systems --what they are and their possible future role in society and
3) to give the student a practical and theoretical knowledge of expert systems, their development, implementation and maintenance.
4) To introduce the student to intelligent tutoring systems and to provide a perspective about the potential impact of these systems

To achieve these objectives each student will be required to write a comprehensive paper concerned with a specific aspect of intelligent systems. In addition each student will plan, develop, implement, document, present and demonstrate a knowledge-based system. This knowledge-based system will be designed to perform a non-trivial task.

TEXT: Expert Systems-Principles and Programming
4th Edition
Joseph C. Giarratano
Gary D. Riley
Publisher: Thomson Learning
Edition Number: 4
ISBN: 0006895204
ISBN-13: 9780006895206

Various class handouts

References:

- L.Bielawski and R. Lewand, *Intelligent System Design*, John Wiley & Sons, New York, NY, 1991

- R.M. Kaplan, *Intelligent Multimedia Systems*, John Wiley & Sons, New York, NY, 1997
- R.C. Schank and C. Cleary, *Engines for Education*, Lawrence Erlbaum Associates, Hillsdale NJ, 1995.
- Barr and E.A. Feigenbaum, eds., *The Handbook of Artificial Intelligence*, Los Altos, CA, William Kaufmann, 1981.
- E.A. Feigenbaum and P. McCorduck, *The Fifth Generation*, Addison-Wesley Publishing, Reading, MA, 1983.
- P. Jackson, *Introduction to Expert Systems*, Addison-Wesley Publishing, Menlo Park, CA, 1986.
- P. Harmon and D. King, *Expert Systems*, John Wiley and Sons, Inc., New York, NY, 1985.
- S. Papert, *Mindstorms*, Basic Books, 1981.
- E. Rich, *Artificial Intelligence*, McGraw-Hill, Inc., New York, NY.1983.
- P.H. Winston, *Artificial Intelligence*, 2nd edition, Addison-Wesley Publishing, Menlo Park, CA, 1984.

Week	***Topic***	***Readings***
1	What is artificial intelligence and where is it?	Handout
2	Introduction to expert systems	Text, Ch. 1 Handout
3	Expert System Development Methodology-- Knowledge representation Methods of Inference	Text, Ch 2, 3
4	Expert System Development Methodology-- Reasoning	Text, Ch 4, 5
5	Expert System Development Methodology-- Problem selection and system architecture design	Text Ch. 6
6	Expert System Development Methodology-- Knowledge engineering	Handout
7	**Mid-Term examination**	
8	Expert System Development Methodology-- Knowledge encoding --expert system shells **Comprehensive Paper Due**	Text, Ch 7, 8, 9
8, 9	Intelligent Tutoring Systems	Handout

10	Getting the Computer to Understand	Handout
11-14	**Project presentations and demonstrations**	

Grading

The grades will be based on:

The comprehensive paper	25%
Mid-term examination	25%
Expert System project	
--Presentation	10%
--Documentation	10%
--Report	30%

Separate handouts will be distributed outlining the requirements for the expert system project.

Late Reports/Papers

Exact due dates for the comprehensive paper and the project report will be announced in class. A late report or paper will not be accepted and the student will be given a zero for that requirement of the course.

Absences

Absences from class are strongly discouraged. A student with 2 unexcused absences may be requested by the instructor to withdraw from the course. An unexcused absence from the mid-term examination will result in a zero grade for the examination.

An absence may be excused if the absence results from health or other serious personal reasons. The instructor will determine if the absence is excused and will inform the student of the decision.

Any student who has a need for accommodation based on the impact of a disability should contact me privately to discuss the specific situation as soon as possible. Contact Disability Resources and Services at 215-204-1280 in 100 Ritter Annex to coordinate reasonable accommodations for students with documented disabilities.

August 1, 2007