CS 430 - Artificial Intelligence
Spring 2007 – Syllabus

Instructor
Dr. Deborah Hwang
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Home page: http://csserver.evansville.edu/~hwang

Office Hours: See instructor's home page.

Course Home Page
Announcements regarding handouts will be made in class. However, most handouts will be available only at the course home page (http://csserver.evansville.edu/~hwang/s07-courses/cs430.html). It is your responsibility to consult the course home page on a regular basis.

Catalog Data
Basic ideas and techniques underlying the design of intelligent computer systems. Topics include heuristic search, problem solving, game playing, knowledge representation, logical inference, and planning. Advanced topics such as robotics, expert systems, learning, and language understanding as time allows.

Objectives
Students will be able to predict the behavior and estimate the cost of various search methods, and be able to choose the appropriate method for particular problems. Students will be able to use first-order logic as a representation of knowledge. Students will write a research paper on a current, advanced AI topic and give an oral presentation on the topic.

Prerequisite: CS 215, Recommended: CS 315

Required Textbook

Daily Requirements
Assigned daily reading. Weekly homework assignments as needed.

Programming Projects
There will be 3-4 programming projects that will illustrate key concepts in artificial intelligence. Each
project will consist of an implementation of the program (70%), and a written analysis of the program and/or the results of the program (30%). Links to download free versions of the Scheme language and the Prolog language are available on the course webpage.

**Research paper and presentation**
Each student will write a research paper on an approved topic in artificial intelligence and give a presentation on their findings. See [Guidelines for AI Research Paper](#) for more information.

**Exams and Evaluation**
There will be two non-comprehensive take-home exams during the term at midterm and at the end of the term. Grades will be based on the following weighted distribution:

- 30% Two take-home exams (15% each)
- 20% Research paper and class presentation
- 35% Programming projects (weighted as indicated in assignment)
- 15% Homework assignments (weighted as indicated in assignment)

**Missed Exams, Late Homework, Late Projects**
Homework and programing projects are due at the instructor's office and/or electronically as appropriate by 4:30pm on the date specified unless otherwise noted. Any assignments arriving after 4:30pm are considered late. The following automatic late penalties will be applied:

- 10% if handed in by 4:30pm, one day late
- 20% if handed in by 4:30pm, two days late
- 30% if handed in by 4:30pm, three days late

Unexcused late work will not be accepted for credit after three days after the due date without prior arrangements. For the purpose of counting days, Friday 4:30pm to Monday 4:30pm is considered one day. Please note that the purpose of the automatic late extension is to allow students leeway when needed. It is usually better to hand in something late and completed than on-time and incorrect. However, chronically handing in late submissions will lower your final grade.

Valid excuses for missing exams and handing assignments in late include illness, family emergencies, religious observances, official UE events such as varsity games and concerts, etc. They do not include (most) work conflicts, studying for other classes, leaving a day early or staying home an extra day over a weekend or holiday, etc. In general, an excused absence is one caused by circumstances beyond your control.

The instructor will rely on your integrity for getting work excused. If you have a valid excuse, put it in
writing, sign your name to it, and give it to the instructor. For religious observances and official UE
events, you must inform the instructor that you will be absent before the absence occurs, otherwise it will
be considered an unexcused absence.

Excused work must be made up within one calendar week from the original due date for full credit. Late
excused work will not be accepted. Exceptions will be made for serious or prolonged illness, or other
serious problems. Please note: It is your responsibility to take care of missed or late work.

Attendance Policy
Attendance is important and expected. Attendance records will be maintained in accordance with Federal
Law, but will not be used in the determination of grades, except in borderline cases. However, the
instructor reserves the right to reduce a final grade in this course for excessive absences. Students will be
warned prior to such action. Students are responsible for all material covered in class. If you miss a
class, find out what was covered from another student. You are responsible for checking the course home
page for new assignments even if you miss class.

Honor Code
All students are expected to adhere to the University's Honor Code regarding receiving and giving
assistance. Three specific guidelines are in force for this course.

- Homework exercises are for you to gain experience and practice. You may collaborate with your
classmates, but each student should submit a solution in his/her own words that reflect his/her
understanding of the solution. Ultimately you will be required to demonstrate your proficiency of
the material on exams. Therefore, it is highly recommended that you attempt all homework
problems on your own before finding a solution from another source. In particular, submissions
that are substantial copies of solutions found in the publisher's instructor manual or on-line will
not receive credit.

- Programming projects are to be your own work. Discussing the meaning and general
solution techniques of an assignment with other students is permitted. For example,
discussing "How is this assignment similar or different from problems presented in the
text or in lecture?" is acceptable.

Asking another person for assistance on specific items in your own code is permitted, but you
may not observe another student's code or solution for the purposes of studying or copying it,
with or without that student's permission. For example, asking, "What does this error
mean?" or "Do I have the correct Scheme syntax here?" is acceptable. Whereas asking
"Can I see how you coded your game?" is not acceptable.
• Of course, exams are to be entirely your own work.

If there is any doubt as to whether assistance is acceptable, consult the instructor.

**Reading Schedule**
This is a tentative schedule to spring break. Adjustments will be made as necessary.

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<th>Week of</th>
<th>Monday</th>
<th>Tues</th>
<th>Wednesday</th>
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<th>Friday</th>
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<tr>
<td>01/08</td>
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<td>Chapter 1: Introduction</td>
<td>Scheme review</td>
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<td>01/15</td>
<td>MLK, Jr. Day</td>
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<td>Ch 2: Intelligent agents</td>
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<td>01/22</td>
<td>Ch 3: Problem-solving agents, searching</td>
<td>Ch 3: Uninformed search</td>
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<td>01/29</td>
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<td>Ch 4: Informed search</td>
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<td>02/05</td>
<td>Ch 4: Exploration</td>
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<td>Ch 5: Constraint satisfaction</td>
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<td>02/19</td>
<td>Ch 6: Adversarial search</td>
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<td>02/26</td>
<td>Ch 6: Adversarial search</td>
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<td>03/05</td>
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