CIS 412        Foundations of Artificial Intelligence         Spring 2007

Monday, Wednesday, Friday   1 – 1:50pm   Dion 101

Instructor:
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DION 302D

Office hours:
Monday, Wednesday 2 - 4pm; Friday 2 - 3pm; or by appointment

TA:
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Textile 101B

Textbook:

Course pages:
http://www.cis.umassd.edu/~ivalova/Spring07/Spring_title.htm
http://www.cis.umassd.edu/~ivalova/Spring07/cis412/CIS412.htm
http://web.cis.umassd.edu

Course Description:
Artificial intelligence problem-solving paradigms. Heuristic versus algorithmic methods,
rational and heuristic approaches, description of cognitive processes. Objectives of work in
artificial intelligence, mid-brain problem and nature of intelligence, simulation of cognitive
behavior and self-organizing systems. Examples of representative applications.

Course Requirements and Grading:
You are expected to take an active role in your learning in this course. This includes
regular attendance, paying attention in class, reading the textbook, and completing all course
requirements. You are encouraged to study with your classmates outside of class.

There will be a midterm exam, a Final exam, projects, and homework assignments. The material
of all exams will come from either a material covered in class, homework problems, and/or
assignment readings. Complete all required work on time and submit through the Learning
Portal. No other forms of submission will be accepted. All assignments are individual unless
otherwise stated. In the event that an exam must be missed, or required work cannot be
completed on time, due to illness or other serious and unavoidable circumstance, notify the
professor as far in advance as possible by phone or e-mail. Make-up exams will not be given for
any reason.

Pagers, cell phones, and other distracting devices are to be disabled in class.

Do not to suffer in silence, bring any grievance to the professor promptly. Seek clarification of
unclear points or assignments in class by asking about them then and there. Seek extra help
during office hours as soon as it is needed. When seeking assistance from the instructor on projects and homework, you will be expected to provide evidence that you have tried alternatives and explored the problem. Be ready to ask and answer specific questions about your efforts.

The evaluation will be based on: the midterm (20%), projects (35%), homework (25%), and final exam (20%).

**Grading table:**

A: 100 - 93.3; A-: 93.2 - 90.0; B+: 89.9 - 86.7; B: 86.6 - 83.3; B-: 83.2 - 80.0; C+: 79.0 - 76.7; C: 76.6 - 73.3; C-: 73.2 - 70.0; D+: 69.9 - 66.7; D: 66.6 - 63.3; D-: 63.2 - 60.0; F: 59.9 - 00.0

**Academic honesty:**

You are encouraged to discuss assigned problems with other people but you must individually design and write your own solutions / code for all assignments. Furthermore, you should explicitly acknowledge any sources of ideas used that are not your own; this includes other people, books, web pages, etc. Submitting modified versions of other people's work as your own is considered cheating. Assignments whose appearance is identical to someone else’s will be given 0 points for all offenders.

**Tentative schedule:**

Introduction to artificial intelligence.
- Intelligent agents. Problems discussed in AI.

Evolutionary computation.
- Genetic algorithms. Applicable problems and their solutions.

Problem solving.

Game playing.
- Games as search problems. State-of-the-art game programs.

Learning.

Reasoning.
- Propositional logic. First-order logic. Basics, applications.

Action and Planning.

Final (as scheduled by the Registrar’s Office)