Course Syllabus – CSC 412 – Introduction to Artificial Intelligence

Instructor: Bikramjit Banerjee
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Office: TEC 201
Office Phone: 601-266-6287
Meetings: 2:00-3:15, Mondays & Wednesdays, in TEC 202
Office Hours: 11:00-12:00 (MW) + 1:00-2:30 (TTh) + by appointment

Status within the Curriculum
Elective

2008-2009 Catalog Description
Introduction to concepts and techniques employed in intelligent systems

Course Prerequisite(s)
1. CSC 307 -- Data Structures and Algorithm Analysis: Required
2. CSC 300 (or equivalent): Preferred

Textbook(s) and/or Other Required Material
Additional course materials may be posted on the class website (URL is case-sensitive):
http://www.cs.usm.edu/~banerjee/CSC412
Various notifications and assignments will also be posted on this webpage, so be sure to check this URL often.

Attendance
You should do your best to attend every class. Knowledge presented in class will be critical for passing the midterm and the final. In addition, pop quizzes (at the very beginning of a class) based on the week’s readings are always a possibility. If you are late for a class, you may miss a quiz, unless prior arrangements are made with the instructor.

Email Policy
If you send me any email, you must include your full name in the email, and mention “CSC 412/512” on the subject line. I may not respond to your email if you fail to do so.

Behavior in Class
You are NOT allowed to use any electronic devices in class, without permission. You must NOT leave while the class is in session without permission. If you have anything to say, it must be addressed to the instructor; you must NOT talk amongst yourselves. Any violation will automatically earn a fail-grade.

This policy is not meant to discourage questions about the class materials. You should ask as many questions about the material as you need to.
Assignments and Workload
There will be a few assignments, 2 projects, and a group presentation, in addition to a midterm, a final, and possibly pop quizzes. The workload will be targeted to roughly 6 to 8 hours per week (on the average) outside of class. Assignments must be submitted on A4-sized paper (no emails) and must be stapled. Hand-written assignments must be clear and legible. Start to work on assignments as soon as deadlines are posted; if you report issues/problems on the deadline, that will not be sufficient to earn an extension.

Grading
35% Assignments/Quizzes
20% Projects
20% Midterm
25% Final

Late homeworks/projects will be penalized by 20% per calendar day, except for extreme circumstances. If possible, give the instructor advance notice of any problems.

Extra credit may be offered periodically, so take advantage of it when it arises. There will not be extra credit (or makeup assignments) available toward the end of the course, so plan accordingly.

In order to get a good distribution of grades, it might be necessary to apply a scale or curve.

Special accomodations
A student with a disability that qualifies under the American with Disabilities Act (ADA) should contact the Office for Disability Accomodations (ODA). Address:

Office of Disability Accomodations
118 College Drive #8586
Hattiesburg, MS 39406-0001
Phone: (601) 266-5024, Fax: (601) 266-6035

Individuals with hearing impairments can contact ODA using the Mississippi Relay Service at 1-800-582-2233 (TTY), or email Suzy Hebert at Suzanne.Hebert@usm.edu

Academic honesty
Students are encouraged to collaborate in preparing for tests/quizzes, and even for homeworks/assignments. However, the final work submitted must be the student's own work. No collaboration will be allowed during quizzes/tests. Any form of academic dishonesty will not be tolerated and will draw severe penalties. See the USM Undergraduate Bulletin for the possible penalties.

Course Schedule (tentative)

<table>
<thead>
<tr>
<th>1. Foundations of AI</th>
<th>History of AI, perspectives – philosophical, mathematical, psychological, thinking vs. acting, humanly vs. rationally, knowledge of the Turing test and “Chinese Room”.</th>
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<tbody>
<tr>
<td>2. Search and constraint satisfaction</td>
<td>Formulation of problem spaces, knowledge of brute-force search methods (breadth-first, depth-first, iterative deepening), informed search methods (best first, A*), heuristics and admissibility, formulation and solution of constraint satisfaction problems, experience with adversarial search (minimax and alpha-beta pruning)</td>
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<td>Knowledge representation and reasoning</td>
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<td>4.</td>
<td>Reasoning under uncertainty</td>
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<td>5.</td>
<td>Planning</td>
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<td>6.</td>
<td>Research literature</td>
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