Syllabus for ICS 461

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TA office: POST 314-8
TA office hours: TBA
Class page: Laulima

Introduction

The goal of this course is to give a broad overview of the state of artificial intelligence via recorded mini-lectures, online discussions/demonstrations, and readings from the textbook and other sources. Because some of the material will be presented online only, active participation in the online forum is important and required.

Learning Objectives

- To understand the historical, cultural and philosophical underpinnings of AI.
- To be familiar with the wide range of goals and approaches that define the field of AI.
- To understand the importance of representation and search in AI and in computer science in general, and to be able to describe key representation strategies and search algorithms.
- To understand and be able to describe in some detail some of the sub-fields of AI, including planning, machine learning, robotics, natural language processing and autonomous agents.
- To be familiar with the key algorithms associated with these sub-fields, and to be able to describe their strengths and weaknesses.
- Given a real-world problem, to be able to suggest AI approaches that might be appropriate for that problem.
- To be able to read and think critically about articles on current AI research and development.

Topics covered

- History and philosophy of AI
- Intelligent agents
- Search and heuristics
- Logic and planning
- Machine learning
- Evolutionary computation
- Natural language processing
• Perception
• Robotics

Readings
The course textbook is *Artificial Intelligence: A Modern Approach*, by Stuart Russell and Peter Norvig. This large textbook explores the theory and practice of AI quite thoroughly. I will be providing page numbers for the 3rd edition, but you are welcome to use an older edition or an e-book. Note that it was not preordered for the campus bookstore, as it can be found at a lower price online. We will cover, in order, chapters 1, 2, 26, 3, 4 (partial), 5, 7, 8, 9, 10, 18 (partial), 22, 24 and 25 (see the schedule on Laulima for details).

I will also provide some required readings: this could be two contrasting views, or a general introduction to the week’s topic, or a more advanced reading. Sometimes a ‘reading’ will be an online demo, which should be explored thoroughly.

Assignments
There will be six assignments assigned over the course of the semester. For all assignments, the student has the option of submitting it at least a week in advance of the deadline for instructor feedback. See “Schedule” on Laulima for deadlines.

All assignments should be submitted as email attachments to both binsted@hawaii.edu and nuritk@hawaii.edu by midnight on the due date.

Online Contributions

Because the course is online only, active participation in the online forum is essential for success in this course. **Please note that your online contributions are worth 10% of your final grade.** Each post should be substantial (e.g. a couple of paragraphs); simply agreeing or disagreeing with a previous poster is not sufficient. Although postings do not need to be formal essays, they should be clearly written in grammatical English.

*Each week*, the quality of your online contributions will be graded as follows:

0: Didn’t post.
1: Posted, but did not make a substantial contribution.
2: Made a substantial contribution over one or more posts, but with errors in content or language.
3: Made a substantial contribution that was clear and correct.

You can earn up to 30 points. So, for example, if you make a substantial, clear and correct contribution each week for ten weeks, you will get full points for participation. However, note that the assessment is weekly – so posting ten contributions in the final week of the course will earn you only three points.
### Grading Breakdown

<table>
<thead>
<tr>
<th>Assignments (6)</th>
<th>15% each</th>
<th>90%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online contributions</td>
<td>10%</td>
<td></td>
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</tbody>
</table>

| 97-100% | A+ |
| 94-96% | A |
| 90-93% | A- |
| 87-89% | B+ |
| 84-86% | B |
| 80-83% | B- |
| 77-79% | C+ |
| 74-76% | C |
| 70-73% | C- |
| 67-69% | D+ |
| 64-66% | D |
| 60-63% | D- |
| < 60% | F |

### Late Policy

Assignments are strictly due at midnight on the due date. After that, assignments will lose 10% per day for each day late, up to five. After five days, the assignment will be graded out of 50%. All assignments must be completed satisfactorily to pass the course with a D grade or better.

### Academic Honesty

Plagiarism and cheating are not tolerated in this course. If a student is caught cheating or plagiarizing, s/he will fail the course, and further disciplinary action may be taken. Please be sure to review the definition of plagiarism, and guidelines on how to avoid it, here:

[http://www.cte.hawaii.edu/plagiarism/plagiarism_1.html](http://www.cte.hawaii.edu/plagiarism/plagiarism_1.html)

### Changes to the Syllabus

The instructor reserves the right to change the syllabus at any time. If any changes are made, the revised syllabus will be posted on the class website, and students will be informed by email. Please be sure to inform the instructor or TA if your contact information changes.