COMPSCI 357: Introduction to Artificial Intelligence
3-credit course with 3 lecture hours per week
Course Coordinator: Tim Andersen

Textbook(s) and Supplemental Material

Catalog Description

PREREQ: COMPSCI 225.

Elective

Goals for the Course
Successful students will be expected to:

- understand the motivation and potential of Artificial Intelligence
- be cognizant of some of the current research questions in Artificial Intelligence
- understand and be able to implement and use algorithms for search, constraint satisfaction, games, logical reasoning, and learning.

Outcomes Addressed

a. an ability to apply knowledge of computing and mathematics appropriate to the discipline
b. an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
c. an ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs
d. an ability to function effectively on teams to accomplish a common goal
f. an ability to communicate effectively with a range of audiences
i. an ability to use current techniques, skills, and tools necessary for computing practice
j. an ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the trade-offs involved in design choices
k. an ability to apply design and development principles in the construction of software systems of varying complexity

Outcomes Assessed: None

Topics Covered
Introduction to the philosophy and history of AI
Intelligent agents
Informed and uninformed search algorithms
Adversarial search
Constraint satisfaction
Logical Agents
Inference in 1st Order Logic
Uncertainty and probabilistic reasoning
Bayesian belief networks
Learning from observations: Decision Trees and Neural Networks
Grading
A letter grade is assigned to each student at the end of the course based on the numerical scores of these activities:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Weight</th>
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<tbody>
<tr>
<td>First Midterm Exam</td>
<td>15%</td>
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<tr>
<td>Second Midterm Exam</td>
<td>15%</td>
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<tr>
<td>Final Exam</td>
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<tr>
<td>Homework</td>
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<tr>
<td>Programming Projects</td>
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Curriculum Category Content (Credits)

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<thead>
<tr>
<th>Area</th>
<th>Core</th>
<th>Advanced</th>
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<tbody>
<tr>
<td>Algorithms</td>
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<tr>
<td>Software Design</td>
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<td>Computer Architecture</td>
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<td>Data Structures</td>
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<tr>
<td>Programming Languages</td>
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