

Master Course Syllabus
School of Engineering and Computer Science
Washington State University Vancouver
CS 440
Introduction to Artificial Intelligence
3 Semester Hours
(3 lecture hours)

Catalog Description

Knowledge representation and automated problem solving; theory and application of agent programming.

Prerequisite Courses

- CS 223 with a C or better
- STAT 212 with a C or better or STAT 360 with a C or better

Prerequisite Topics

- Elementary statistics
- Propositional Logic / Logic Proof Procedures
- Proficiency in at least one programming language

Measured Course Outcomes

Students taking this course will:

1. Select appropriate AI techniques for potential solutions. (Contributes to performance criterion 1-c.)
2. Implement simple machine learning algorithms to solve problems. (Contributes to performance criterion 6-c.)
3. Solve computational problems using search. (Contributes to performance criterion 6-d.)

Required Textbooks

Artificial Intelligence: A Modern Approach, Stuart Russell and Peter Norvig. Pearson Education, Inc.

Reference Material

None.

Major Topics Covered in the Course

1. History of AI
2. Agents and Environments
3. Problem Solving as Search
4. Knowledge Representation
5. Machine Learning

Projects

Programming Project Area	Weeks
Search	2
Machine Learning	2

Design, Implementation and Analysis

A variety of problems are examined that have no obvious algorithmic solution. By examining the constraints of the problem, students will select and apply the methods of artificial intelligence to synthesize solutions.

In this course, solution design requires students apply problem solving strategies such as search and learning to a variety of problems, either at the conceptual level (on paper) or through a working implementation. Solution designs are examined in class, and form the basis for homework exercises, exam questions and programming projects.

CS2013

This course provides coverage of CS2013 knowledge areas. Values listed are minimum course hours dedicated to the topic, percentages indicate the fraction of CS2013 knowledge area topics covered (acceptable values are: <25%, 25-75%, >75%, or 100%).

Area	Tier 1	Tier 2	Elective
IS/Fundamental Issues		2 (100%)	
IS/Basic Search Strategies		4 (100%)	
IS/Basic Knowledge Representation and Reasoning		3 (100%)	
IS/Basic Machine Learning		4 (100%)	
DS/Basic Logic	4 (100%)		
DS/Graphs and Trees	1 (100%)		

Course Coordinator:	Scott Wallace
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