CSE 4301 Artificial Intelligence (3 credits)

Primary instructor: Philip Chan

Textbooks and references:

S. Russell and P. Norvig, Artificial Intelligence: Modern Approach, 3rd edition. Pearson, 2010. (T)

Course information:

2014–2015 Catalog description: CSE 4301 Introduction to Artificial Intelligence (3 credits). Surveys artificial intelligence, focusing on state-space and problem-reduction approaches to problem solving. Attention is given to the use of heuristics and their use in game-playing programs. Also discusses knowledge representation, automated reasoning and expert systems. Prerequisites: CSE 2010 or ECE 2552.

Prerequisites by topic: Data structures, algorithmic paradigms, efficiency measures, asymptotic rates of growth, trees, and graphs

Place in program: Advanced elective

Course outcomes & related student outcomes: The student will be able to

1. Describe fundamental concepts and topics in artificial intelligence.(1: Fundamental knowledge)
2. Use problem-solving heuristics and search in the analysis of artificial intelligence problems. (2: Scientific, computing, and engineering problem solving)
3. Explain knowledge representation and reasoning. (2: Scientific, computing, and engineering problem solving)
4. Discuss planning and learning techniques. (2: Scientific, computing, and engineering problem solving)

Topics covered:

1. Lisp (6)
2. Problem solving (3 hours)
3. Search in graphs and trees (9 hours)
4. Constraint satisfaction (3 hours)
5. Adversarial search and games (3 hours)
6. Logic and inference engines (9 hours)
7. Planning (3 hours)
8. Learning (3 hours)
9. Reasoning with uncertainty (3 hours)

Approved by: Philip Chan, Associate Professor

Signature: Philip Chan **Date:** 1/30/15