CSC/CPE 480 Artificial Intelligence

1. CSC/CPE 480 Artificial Intelligence

2. credit units 4  contact hours 6

3. Course Coordinator: Franz Kurfess


5. a. Course Description: Programs and techniques that characterize artificial intelligence. Programming in a high level language. 3 lectures, 1 laboratory. Crosslisted as CPE/CSC 480.

b. Prerequisite: CSC/CPE 103 with a grade of C- or better.

c. Required/Elective/Selective Elective for CPE, CSC, EE, SE

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6. a. Course Goals/Outcomes
   The student will be able to:
   - Know classic examples of artificial intelligence
   - Know characteristics of programs that are "intelligent"
   - Understand the use of heuristics
   - Know a variety of ways to represent and search for information
   - Know the fundamentals of programming Artificial Intelligence problems in a high-level programming language
   - Consider ideas and issues associated with social, technical, and ethical uses of machines that involve "artificial" intelligence

   b. How Student Outcomes addressed
   (“B” = Basic level, “I” = Intermediate level, “A” = Advanced level)

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7. Major Topics Covered: (number of lecture hours each)
   - Introduction and history of A.I. (3)
   - Intelligent Agents (3)
Problem Solving by Search: depth-first, breadth-first, iterative deepening, best-first, A*, iterative deepening A*, SMA*, hill climbing, simulated annealing, some efficiency and complexity work (6)

Game Playing: comparison of human to machine approaches, minimax procedure, alpha-beta pruning, effectiveness of alpha-beta pruning, state-of-the-art in specific games (3)

Knowledge and Reasoning: classifications of knowledge, representations, logic, inference, propositional logic and applications, prepositional logic and applications, resolution, theorem proving, question & answers (6)

Learning: basic concepts, categorization and decision trees, induction of decision trees from data sets, neural networks, backpropagation method, (6)

Future of A.I. and conclusions (3)