CSC 480 Artificial Intelligence

1. CSC 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.

b. Prerequisite: Prerequisite: either CSC/CPE 102 and CSC/CPE 103 with a grade of C- or better or consent of instructor; or CSC/CPE 202 with a grade of C- or better and junior standing.

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:
- Discuss classic examples of artificial intelligence
- Explain characteristics of programs that are "intelligent"
- Explain the use of heuristics
- Use and compare a variety of ways to represent and search for information
- Employ the fundamentals of programming Artificial Intelligence problems in a high-level programming language
- Evaluate 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)