CSC/CPE 481 Knowledge Based Systems

1. CSC/CPE 481 Knowledge Based Systems

2. **credit units** 4  **contact hours** 6

3. **Course Coordinator**: Franz Kurfess


5. a. **Course Description**: In-depth treatment of knowledge representation, utilization and acquisition in a programming environment. Emphasis on the use of domain-specific knowledge to obtain expert performance in programs. 3 lectures, 1 laboratory. Crosslisted as CPE/CSC 481.

   b. **Prerequisite**: CSC/CPE 480.

   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:
   - Learn the fundamental approaches, algorithms and architectures of at least three major artificial intelligence paradigms (for example, expert systems, fuzzy logic, neural networks, blackboard systems, natural language processing, etc.)
   - Understand how to apply these approaches in the design and development of knowledge-based systems
   - Gain practical programming experience using these paradigms
   - Apply this knowledge, understanding and experience to a particular problem domain.

   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 to Expert Systems (4)
• Problem Solving Using Expert Systems (6)
  (general design principles and structures of expert systems, examples of historical
  systems, use of a high-level software development environment such as CLIPS or Jess)
• Reasoning Methods for Expert Systems (4)
• Advanced Agent Concepts and Knowledge Based Systems (3)
• Current Topics in Artificial Intelligence (3)
• Practical Applications and Project Reviews (10)