CSC 580 Artificial Intelligence

1. CSC 580 Artificial Intelligence

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

3. **Course Coordinator:** Franz J. Kurfess


5. a. **Course Description:** Current research in the field of artificial intelligence with emphasis on cooperative agents, distributed agents, and decision making in complex, concurrent environments. AI programming in a distributed environment. 3 lectures, 1 laboratory.

b. **Prerequisite:** CSC 480 and graduate standing, or consent of instructor.

<table>
<thead>
<tr>
<th>Required/Elective/Selective Elective for CPE, CSC, EE, SE</th>
<th>CSC</th>
<th>CPE</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Selective Elective</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6. a. **Course Goals/Outcomes**
The student will be able to:
- Describe problems and architectures for intelligent agents and distributed multi-expert systems.
- Discuss common architectures for intelligent agents and distributed algorithms.
- Use development tools for intelligent agents in a distributed environment to provide efficient execution of a computationally intensive problem.
- Explain how multi-agent architectures can simplify the architecture for solving a complex problem.
- Integrate separate modules or systems to provide a framework for multiple expert systems in a distributed environment.
- Present critical reviews of approaches to coordinated and/or cooperative problem-solving systems through a taxonomy of evaluation criteria.

b. **How Student Outcomes addressed**
(“B” = Basic level, “I” = Intermediate level, “A” = Advanced level)
7. **Major Topics Covered: (number of lecture hours each)**

- Intelligent Agents and Distributed Algorithms (5)
- Agent Systems (6)
- Multi-Agent Systems (3)
- Knowledge Acquisition Representation and Reasoning in Agents (3)
- Learning in Agents (3)
- Cooperative and Coordinated Systems (6)
- Design and Implementation of a Multi-agent system (4)