

<b>Dept Number</b>	<b>CS 436</b>	<b>Course Title</b>	<b>Artificial Intelligence I</b>							
<b>Semester Hours</b>	<b>3</b>	<b>Course Coordinator</b>	<b>Norman Carver</b>							
<b>Catalog Description</b>	Search and heuristics, problem reduction. Predicate calculus, automated theorem proving. Knowledge representation. Applications of artificial intelligence. Parallel processing in artificial intelligence.									
<b>Textbooks</b>										
<i>Artificial Intelligence: A Modern Approach</i> . Russell, S. and P. Norvig. Prentice Hall, 2 <sup>nd</sup> Edition, 2002. ISBN: 9780137903955.										
<b>References</b>										
<b>Course Learning Outcomes</b>										
<ul style="list-style-type: none"> <li>• To learn the basic concepts and techniques of artificial intelligence, research areas and applications.</li> <li>• To understand the concepts of heuristic search and knowledge, and the relevance of AI research to cognitive science.</li> <li>• To learn Lisp and Prolog programming languages.</li> </ul>										
<b>Assessment of the Contribution to Student Outcomes</b>										
<b>Outcome →</b>	1	2	3	4	5	6	7	8	9	10
<b>Assessed →</b>	X		X					X		X
<b>Prerequisites by Topic</b>										
CS 311 and 330 each with a grade of C or better.										

**Major Topics Covered in the Course**

1. Artificial intelligence: introduction, intelligent agents {3 classes}
2. Problem solving: solving problems by searching, informed search and exploration, constraint satisfaction problems, adversarial search {8 classes}
3. Knowledge and reasoning: logical agents, first-order logic, inference in first-order logic, knowledge representation {8 classes}
4. Planning: planning and acting in the real world {3 classes}
5. Uncertain knowledge and reasoning: uncertainty, probabilistic reasoning, probabilistic reasoning over time, making simple decisions, making complex decisions {10 classes}
6. Learning: learning from observations, knowledge in learning, statistical learning methods, reinforcement learning {4 classes}
7. Communicating, Perceiving, and Acting: communication, probabilistic language processing, perception, robotics {4 classes}