COURSE DESCRIPTION

Department and Course Number	CS460	**Course Coordinator**	Russ Abbott
Course Title	Artificial Intelligence	**Total Credits**	4

Current Catalog Description:

Knowledge representation; problem solving strategies and search algorithms; applications from such areas as theorem proving, expert systems, natural language processing, robotics, and pattern recognition.

Textbook:

Haridi, Van Roy, *Concepts, Techniques, and Models of Computer Programming,* S. MIT pres, 2004.

References:

Norvig, Russell. *Artificial Intelligence: A Modern Approach, 2nd edition,* Prentice Hall, 2002.

Course Goals:

- To introduce students to the theory and technologies of artificial intelligence.

These course goals contribute to the success of **Student Learning Outcomes 1.a, 1.d, 1.e, 2, 3, 5, and 6**.

Prerequisites by Topic:

- Fluent in at least one programming language
- Fluent in data structures and algorithms
- Computational complexity

Major Topics Covered in the Course:

- Intelligent agents
- Search
- Knowledge and Reasoning
- Planning
- Reasoning with Uncertainty
- Learning (optional)

Laboratory Projects (specify number of weeks on each):

At the discretion of the instructor. Projects range from weekly assignments to three more significant projects covering 3 weeks each over the course of the term.

Estimate Curriculum Category Content (Quarter Hours)

Area	Core	Advanced	Area	Core	Advanced
Algorithms		1.0	Data Structures		1.0
Software Design		1.0	Prog. Languages		1.0
Comp. Arch.					

Oral and Written Communications:

The students are required to submit and discuss the source code and documentation of the work that they do.

Social and Ethical Issues:

No significant component.

Theoretical Content:

- Introduction to search techniques (3 week)
- Introduction to reasoning and proof (1 week)
- Introduction to constraint satisfaction (1 week)
- Introduction to planning (1 week)
- Introduction to probabilistic reasoning (1 week)

Problem Analysis:

Students are required to identify the issues required (such as knowledge representation, search strategies, and algorithm requirements) for dealing with problems that typically require searching for solutions.

Solution Design:

Solution design involves the development of programs that exhibit what is often referred to as artificial intelligence.