COURSE DESCRIPTION

Department and Course Number	**CS 460 (formerly CS 462)**	Course Coordinator	**Thamar Solorio**

Course Title	**Artificial Intelligence**	Total Credits	**3**

Current Catalog Description

This course will provide an introduction to fundamental concepts in the field of artificial intelligence. Topics typically covered include agents, search, logic and knowledge representation, probabilistic models, machine learning, natural language processing and perception.

Textbook

***Artificial Intelligence: A Modern Approach, Second Edition,* by S. J. Russell and P. Norvig, publisher Prentice Hall, 2002.**

References

Course Goals

To familiarize students with current concepts and techniques in artificial intelligence.

Prerequisites by Topic

Algorithms and Data Structures
Automata and Formal Language Theory
(with grades of "C" or better)

Major Topics Covered in the Course

Search Algorithms
First-Order Logic
Probabilistic Reasoning
Supervised Learning
Reinforcement Learning

Laboratory projects (specify number of weeks on each)

Estimate CSAB Category Content

	CORE	ADVANCED		CORE	ADVANCED
Data Structures Algorithms		X	Computer Organization and Architecture		
Software Design		X	Concepts of Programming Languages		X

Oral and Written Communications

Every student is required to submit at least 2 written reports (not including exams, tests, quizzes, or commented programs) of typically 4-10 pages and to make 1 oral presentations of typically 10-20 minutes duration.

Social and Ethical Issues

Approximately one hour will be spent discussing the social and ethical issues related to developing "intelligent" computer systems. A homework assignment will be used to evaluate this part.

Theoretical Content

Some logic (~10%), a bit of philosophy (~5%), some probability and statistics (~40%).

Problem Analysis

See below.

Solution Design

Students will learn different techniques for solving problems, based on search algorithms, logic, supervised learning, and probabilistic approaches. They will hone their analytical skills by practicing understanding problems and their environment (dynamic vs static, fully observable or partially observable), and designing a solution using the technique that will provide the "best" performance under the specific time and computational constraints. In addition, students will also learn how to assess performance of the proposed solutions.