



CSCI 580 **Introduction to ARTIFICIAL INTELLIGENCE** **Syllabus**

Time/Location: 9:00 – 9:50p.m. M,W,F OCNL 237

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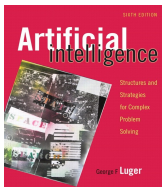
Office Hours: M 3-4pm & T,R 11-1pm OCNL 226

Prerequisites: Grade of C- or above in CSCI 311 (*Algorithms & Data Structures*)
Recommend: Grade of C- or above in *Discrete Math* and Sr. standing.

Satisfies: *GE Theme J (substitute for CSCI381, contact theme coordinator)*

Catalog Description: An introduction to the basic principles, techniques, and applications of Artificial Intelligence. Coverage includes knowledge representation, logic, inferencing, problem solving, search algorithms, game theory, perception, learning, planning, and agent design. Students will experience programming in AI language tools. Potential areas of further exploration include expert systems, neural networks, fuzzy logic, robotics, natural language processing, and computer vision.

Required Textbooks:



Artificial Intelligence: Structures & Strategies for Complex Problem Solving, 6/e

George F. Luger, 2009. Pearson Education, Boston, Massachusetts.
ISBN: 978-0321545893

Recommended: access to and usage of online LISP tutorials and references
[Common Lisp: The Language, 2nd Edition](#)
Guy Steele, Digital Press
<http://www.cs.cmu.edu/Groups/AI/html/cltl/cltl2.html>

Resources:

Chico State Connection (CSC) Portal (see [http://portal.c- suchico.edu](http://portal.c-suchico.edu))

Online Vista course page (includes up-to-date events, gradebook, assignments, etc.): *Fall 2011 - 118-CSCI580-01-3301*

Objectives:

The primary objective of this course is to introduce the basic principles, techniques, and applications of Artificial Intelligence. Emphasis will be placed on the teaching of these fundamentals, not on providing a mastery of specific software tools or programming environments. Assigned projects promote a 'hands-on' approach for understanding, as well as a challenging avenue for exploration and creativity.

Specifically:

- 1) Gain a historical perspective of AI and its foundations.
- 2) Become familiar with basic principles of AI toward problem solving, inferencing, perception, knowledge representation, and learning.
- 3) Investigate applications of AI techniques in intelligent agents, expert systems, artificial neural networks and other machine learning models.
- 4) Experience AI development tools such as an 'AI language', expert system shell, and/or data mining tool.
- 5) Experiment with a machine learning model for simulation and analysis.
- 6) Explore the current scope, potential, limitations, and implications of intelligent systems.

Course outcomes:

Upon successful completion of this course, the student shall be able to:

1. Demonstrate fundamental understanding of the history of artificial intelligence (AI) and its foundations.
2. Apply basic principles of AI in solutions that require problem solving, inferencing, perception, knowledge representation, and learning.
3. Demonstrate awareness and a fundamental understanding of various applications of AI techniques in intelligent agents, expert systems, artificial neural networks and other machine learning models.
4. Demonstrate proficiency developing applications in an 'AI language', expert system shell, or data mining tool.
5. Demonstrate proficiency in applying scientific method to models of machine learning.
6. Demonstrate an ability to share in discussions of AI, its current scope and limitations, and societal implications.

Grade Evaluation*: Participation	10%
Critique	10%
Homework & Projects	20%
Midterm Exam	25%
Final Exam	45%

Final Grades*: Final grades shall be expressed as a percentage of the maximum possible score of all evaluated materials. Letter grades will be given according to the following scheme:

<u>Scale</u>	<u>letter grade</u>	<u>University Definition</u>
[93,100]	A	Superior Work
[90,93)	A-	
[87,90)	B+	Very Good Work
[83,87)	B	
[80,83)	B-	Adequate Work
[77,80)	C+	
[73,77)	C	
[70,73)	C-	
[67,70)	D+	Minimally Acceptable Work
[63,67)	D	
[60,63)	D-	
[0,60)	F	Unacceptable

Any grade discrepancy must be submitted in writing, along with original document, within 1 week of distribution.

Attendance:

Attendance for all class meetings is expected. Students will be held responsible for all subject matter and procedural information discussed in class and covered in the text. Lecture material will not be reiterated for persons failing to attend a previous session. In the event that you are forced to miss a class it will be your responsibility to check the course web page for project information, lecture topics covered, etc.

Participation:

Participation will be judged on class attendance, preparedness, interactions, and possibly in-class or online quizzes. Example tasks will include sample problems, end-of-chapter exercises, readings & investigations, and small programming tasks. These will be assigned to enhance your understanding of the material and of the languages and tools used in AI systems. You may be expected to operate within multiple platforms and development environment, using various AI tools.

Critique: Students will read and critique a professional paper or manuscript. You will be asked to evaluate the content and presentation, as well as respond to specific questions surrounding the significance and implications of the work. All critiques will be judged for quality of writing, clarity, and communication.

Projects & Homework: various projects and homework will be assigned throughout the semester. These may carry a 'graded' or 'non-graded' designation. You are required to submit 'graded' work, and 'non-graded' work is highly recommended, but not submitted. Oftentimes you will be allowed to work in project groups (only when specifically noted), most often this will be for lab assignments, otherwise, you are expected to work individually. Whenever assignments are not provided, it is recommended that you practice end-of-chapter exercises.

Exams: There will be only two exams for this class. The midterm will be administered in a regular class period (to be posted on Vista). The Final Exam will be administered during the Final Exam period, as posted online. You are encouraged to form study groups to prepare for exams. *Make-up exams will not be given without approval* from the professor. Any unapproved absence from an exam will yield a score of zero, no exceptions.*

***Excused Absences:**

Requests for excused absences will be carefully reviewed and verified before approval. Medical emergencies/crises must be officially documented and verifiable. Under normal circumstances, the following will not be grounds for approval: outpatient visits to a physician, traffic, car problems, work, etc.

Late drops and Incompletes:

University policies enforcing drop dates and criteria for incompletes will be strictly adhered to and at the professor's discretion. LATE DROPS are generally not given.

Academic Dishonesty:

You are required to turn in your own work and not the work of others. Collaboration on homework, projects and exams is prohibited, unless otherwise specified by the professor. Likewise, plagiarism of other's work or web-related sources constitutes as a serious infraction. A penalty will be enforced for any student participating in any form of academic dishonesty. The minimum penalty will be a shared grade for that assignment. For serious or repeated infractions, the Vice-President for Student Affairs may also be notified with the recommendation of permanent suspension from the University.

It is my policy to return all homework and projects but not exams.

Please advise me immediately (within 1 week of start of classes), if you have a disability that will require a reasonable accommodation for the successful completion of this course.