An Introduction to Artificial Intelligence
Principles of Artificially Intelligent Machines
CS 427/527 Tu/Th 2:00-3:15 PM, Room: Dane Smith Hall 226

Instructor: Lydia Tapia, ECE L215B (basement), Email: tapia@cs.unm.edu, Phone: 277-0858
Office Hours: M 1:30-3:30 and W 12:30-1:30, and by appointment.

Teaching Assistant: Jon David, ECE L214A (basement), Email: jdavid@cs.unm.edu
Office Hours: MWF 11am-noon and by appointment.

Course Assistant: John Baxter, ECE L214A (basement), Email: automata@unm.edu

Course Webpage: Will be on UNM Learn

Textbook: Artificial Intelligence: Structures and Strategies for Complex Problem Solving (6th Edition), George F. Luger, Addison-Wesley Pearson, 2009.
(optional) AI Algorithms, Data Structures and Idioms in Prolog, Lisp, and Java, George F. Luger and William A. Stubblefield, Pearson Education, 2009.

Course Outline (Subject to change):

Week of	**Topic/Assignment**
8/23	Chapter 1, AI, its roots and scope
8/30	Chapter 3, Structures and strategies for state space search
9/6	Chapter 4, Heuristic search
9/13	Chapter 2, Predicate calculus
9/20	Chapter 5, Probabilistic methods in AI
9/27	Chapter 6, Architectures for AI problem solving
10/4	Prolog
10/11	Chapter 7, Intro. AI representational schemes
10/18	Chapter 7, continued
10/25	Chapter 8, Representation & knowledge-based systems
11/1	Chapter 8, Representation & knowledge-based systems
11/8	Chapter 9,Reasoning in uncertain situations
11/15	Building a rule based expert system in Prolog
11/22	Building a rule based expert system in Prolog
11/29	Advanced topic: robotic intelligence
12/6	Advanced topic: TBD
12/13	Chapter 16, Course summary and review

Grade Policy: Your grade will be based on four components:

- exams 40% There will be two midterm exams
- homework and quizzes 25% There will be 10 weekly assignments and/or in class exercised an/or quizzes, typically one per week.
- programs 25% There will be a series of programming projects. More details will be posted on UNM Learn as the assignments are released.
- paper 5% There will be a group paper, on a topic in AI of the student's choice. More details will be available on UNM Learn during the semester.
- participation 5% We will define participation during this course. Options will include: paper reading, industry speakers, attendance, etc.

Assignments will be turned-in using UNM Learn and other online mechanisms. Detailed instructions will be given out for each assignment. For any given assignment, its online mechanism **MAY OR MAY NOT** accept late turn-ins late, but if it does, there will be fixed percentage penalties for lateness. Once the online turn-in window closes for an assignment **no further turn-ins** will be accepted, and note there are **absolutely NO 'free late days' or any other grace period**. If you are unable to turn-in an assignment on time due to an extraordinary circumstance (e.g., serious illness, death in the family, or any other reason), you must make **PRIOR ARRANGEMENTS** with the instructor via email **before the assignment is due, and then turn-in according to those arrangements AND follow-up** with appropriate problem-specific documentation (e.g., note from doctor, newspaper announcement, etc). Without such prior arrangements and supporting documentation, **any assignment not turned in by its online closing will receive a grade of 0**. There will be **no make-up exams except for university-excused absences**. Please discuss unusual circumstances in advance with the instructor.

Requests for instructor-initiated drops MUST be in writing via email to the course instructor before the final exam. They will be evaluated on a case-by-case basis.

Course grades will be assigned according to this scale (with adjustment for the lack of 'D' grade for 527 students):

- A for 90% or above of the total points,
- B for 80 to 89%,
- C for 70 to 79%,
- D for 60 to 69%,
- and F for less than 60%.

Once final course grades have been reported, **no changes to grades or grade modes will be made**, except possibly to correct a significant instructor error, or to complete a medical Incomplete under conditions that were prearranged before grades were reported

Academic Honesty: For everyone's benefit, students should uphold the guidelines in the University of New Mexico Student Code of Conduct.

For the assignments in this class, discussion of concepts with others is encouraged, but all assignments must be done on your own, unless otherwise instructed. If you use any source other than the text, reference it/him/her, whether it be a person, a book, a solution set, a web page or whatever. You MUST write up the solutions in your own words. Copying is strictly forbidden.

Programming courses can present some difficult situations for the student as to what is allowable. The guiding principle is that the work you turn in must be your own, not merely in terms of the specific code, but also in terms of the overall design of the program. The basic principle for discussing projects with other students is: *You may help each other understand the problems, but not the* **solutions**. It is acceptable to discuss algorithms and data structures in general, and coding style, and the requirements of the assignment, with other members of the class. It is acceptable to get a limited amount of debugging help from another member of the class.

The following are some examples of behavior that is not acceptable with regards to programming: Copying another person's program with or without their knowledge, codeveloping a program for an individual project, mailing all or portions of your program to another person, making your files readable so another person can copy them, reading another person's files, using another person's listing (taken from the trash, for example), having another person write any portion of your program for you.

The following are some examples of behavior that is not acceptable with regards to summaries and reports: Copying language from a research paper or any other document without placing in quotation marks and citing and copying algorithms or figures from other documents without appropriate citation.

Cheating or plagiarism will result in an automatic F for the entire course and turning the case over to the appropriate authorities for further disciplinary action. There will be no second chances. In cases of copying, where it is sometimes difficult to tell who was copying from whom, all students with knowledge of the cheating will be penalized except in rare circumstances. If in doubt it is your responsibility to ask your instructor in advance.

Americans with Disabilities Act (ADA) Policy Statement: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Affairs, Accessibility Resource Center in Mesa Vista Hall, Rm. 2021.

Being Successful in CS427/527 Tips

Programming Style: 'Programming style' which overlaps with, but is different than, software design, is also important. Good programming style includes many things, such as:

- creating methods to avoid 'cut and paste' code duplication at all costs,
- following whatever are the prevailing conventions for low-level code formatting such as indentation and capitalization,
- selecting clear and consistent names for everything from classes to temporary variables,
- producing clean and readable code free of debugging 'battle scars', and
- writing clear, grammatical, and correctly-spelled comments, and comments in code where needed for readability.

Programming is a process, not a finished product, and you will do better if you document as you go rather than promising yourself you'll add comments at the last minute. (What you should do at the end is just check that your existing comments still reflects your actual code!)

You will do best, both in this class and in general, if you think of creating a program not as a private interaction between you and a computer, but as a public dialogue between you and all the other programmers that may ever read, modify, debug, extend, praise, ridicule, learn from or furiously delete your code.

Working Programs: It is absolutely essential that programs work. A submitted program may contain subtle bugs of which you might not even be aware. However, if your program does not work in even a minimal way, it will not receive a passing grade.

Proofread Writing Assignments: It is absolutely essential that any writing assignment that you turn in is carefully proofread. A simple solution is to read each other's papers. Spell checking and basic gammer checking is also expected. **All writing assignments are expected to be turned in in PDF format.**

Time Management: This class is a senior level/graduate level course where assignments are challenging. Failure to achieve working programs and ontime submissions is most commonly due to starting too late. Think ahead, ask questions, and plan your time accordingly.

Please complete, sign, and return this page to Professor Tapia (**KEEP the previous pages for reference**.) Your assignments will not be graded until we have received this signed agreement.

CS 427/527
Fall 2016 Student Information

Your full name (print legibly): _____

Student ID number: _____

What you prefer to be called (seriously): _____

Student Declaration

I have read and understood the **CS 427/527** Syllabus and policies for **Fall 2016** and I agree to abide by its contents.

Signature _____

Date _____