CSE 5360 / CSE 4308: Artificial Intelligence
Summer 2016

Instructor: Jesus A. Gonzalez

Office Number: 321

Office Telephone Number: I do not have a phone in my office, but in case of an emergency you can call the CSE department at (817) 272-3785

Email Address: Check webpage

Faculty Profile: Check webpage

Office Hours: Monday and Tuesday, 15:00 – 17:00

Section Information: CSE-5360-001, CSE-4308-001

Time and Place of Class Meetings: NH-202, Monday and Wednesday, 13:00 – 14:50 hrs.

Description of Course Content:
This course provides an introduction to the philosophy and techniques of Artificial Intelligence. AI is widely used in different areas of knowledge and thus, it has been applied to different real-world problems such as those with which we interact in our daily activities (i.e. weather prediction, cleaning robots, automatic translation, recommender systems and many more).

CSE4308: An introduction to the field of artificial intelligence studying basic techniques such as heuristic search, deduction, learning, problem solving, knowledge representation, uncertainty reasoning and symbolic programming languages such as LISP. Application areas may include intelligent agents, data mining, natural language, machine vision, planning and expert systems. Prerequisite: CSE 3302, CSE 3315 and CSE 3380 (or MATH 3330).

CSE5360: Introduction to the methods, concepts and applications of artificial intelligence, including knowledge representation, search, theorem proving, planning, natural language processing, and study of AI programming languages. Prerequisite: CSE 2320 and 3315, or consent of instructor.

Student Learning Outcomes:
- Understanding different Artificial Intelligence (AI) techniques that have been used for solving real world problems
- Understanding the differences and use of different AI techniques in order to choose from them for solving a problem at hand
- Understanding the implementation issues of AI algorithms

Required Textbooks and Other Course Materials:
Textbook:
Stuart Russell and Peter Norvig
Artificial Intelligence, Third Edition
Pearson, 2013

Descriptions of major assignments and examinations:
This course will be graded with written assignments (20%), programming assignments (20%) and three exams (60%). All assignments have equal weight.

- Written Assignments - 20%
- Programming Assignments - 20%

- Midterm exam 1 - 15%
- Midterm exam 2 - 15%
- Final exam - 30%

Attendance: At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I have elected to take attendance but will not factor attendance into the grade.

Other Requirements:
Prerequisites
- CSE 2320, *Algorithms and Data Structures* (or equivalent)
- CSE 3315, *Theoretical Computer Science* (or equivalent)
- Programing experience in a programing language (i.e. C, C++, Java, Python, R)

Grading:

Assignment scores and exam scores are converted to letter grades based on the following scale:

- A: 90%
- B: 80%
- C: 70%
- D: 60%
- F: below 60%

Students are expected to keep track of their performance throughout the semester and seek guidance from available sources (including the instructor) if their performance drops below satisfactory levels; see "Student Support Services," below.

Requests for re-grading (for assignments or exams) must be made within 5 days of receipt of the grade except for the final exam, which must be made within 3 days of receipt of the grade.

Expectations for Out-of-Class Study: Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 9 hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing for exams, etc.

Grade Grievances: Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance**. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (http://wweb.uta.edu/aao/fao/).

Disability Accommodations: UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA), The Americans with Disabilities Amendments Act (ADAAA),* and *Section 504 of the Rehabilitation Act.* All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a letter certified by the **Office for Students with**

Disabilities (OSD). Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:
The Office for Students with Disabilities, (OSD) www.uta.edu/disability or calling 817-272-3364.
Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671.

Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Title IX: *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos. For information regarding Title IX, visit* www.uta.edu/titleIX.

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

> *I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*
>
> *I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit http://www.uta.edu/sfs.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week,

classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures:
Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, there are two exits located to the North of the classroom. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at http://www.uta.edu/universitycollege/resources/index.php

The English Writing Center (411LIBR): Hours are 9 am to 8 pm Mondays-Thursdays, 9 am to 3 pm Fridays and Noon to 5 pm Saturdays and Sundays. Walk In ***Quick Hits*** sessions during all open hours Mon-Thurs. Register and make appointments online at http://uta.mywconline.com. Classroom Visits, Workshops, and advanced services for graduate students and faculty are also available. Please see www.uta.edu/owl for detailed information.

Tentative Course Schedule

1. Introduction to AI (June 6)
2. Intelligent Agents (June 8)
3. Solving Problems by Searching (June 13)
4. Beyond Classical Search (June 15)
5. Adversarial Search (June 20)
6. Logical Agents (June 22)
7. Midterm Exam 1 (June 27)
8. First-Order Logic (June 29)
9. Official Holiday (July 4)
10. Classical Planning (July 6)
11. Planning and Acting in the Real World (July 11)
12. Quantifying Uncertainty (July 13)
13. Probabilistic Reasoning (Bayesian Networks) (July 18)
14. Midterm Exam 2 (July 20)
15. Learning from Examples (Introduction) (July 25)
16. Decision Trees (July 27)
17. Neural Networks (August 1)
18. Naïve Bayes (August 3)
19. Final Exam (August 8)

As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. –Jesus A. Gonzalez.

Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. Non-emergency number 817-272-3381

Faculty members should feel free to incorporate any of the following information into your course syllabus or other course materials.

Library Home Page	http://www.uta.edu/library
Subject Guides	http://libguides.uta.edu
Subject Librarians	http://www.uta.edu/library/help/subject-librarians.php
Course Reserves	http://pulse.uta.edu/vwebv/enterCourseReserve.do
Library Tutorials	http://www.uta.edu/library/help/tutorials.php
Connecting from Off- Campus	http://libguides.uta.edu/offcampus
Ask A Librarian	http://ask.uta.edu

The subject librarian for your area can work with you to build a customized course page to support your class if you wish. For examples, visit http://libguides.uta.edu/os and http://libguides.uta.edu/pols2311fm .