CSE 4308/5360: Artificial Intelligence

Summer 2025

Instructor Information

Instructor
Vamsikrishna Gopikrishna, Ph.D.

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ERB 553

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https://crystal.uta.edu/~gopikrishnav/

Faculty Profile
https://mentis.uta.edu/explore/profile/vamsikrishna-gopikrishna

Office Hours

- Timings: **Tuesday 1:00 PM – 4:00 PM**
- Location: My office (ERB 553) or via TEAMS

If you are unable to meet during this time, please email the instructor to setup an alternate meeting time.

Course Information

Section Information

- CSE 4308/5360 001
- CSE 4308/5360 002

Time and Place of Class Meetings
Class meetings for all sections will be On Campus

- **CSE 4308/5360 001**: NH 110 – **Monday/Wednesday 1:00 PM – 2:50 PM**
- **CSE 4308/5360 002**: NH 109 – **Monday/Wednesday 3:30 PM – 5:20 PM**

Course Webpage

- Course slides, assignment problem statements, and sample exam material will be posted on: http://crystal.uta.edu/~gopikrishnav/classes/2025/summer/4308_5360/
- Videos, Submission Links for Assignment, and other material will be posted on: Canvas

Description of Course Content
This course introduces the basic philosophies and techniques of Artificial Intelligence. AI techniques have become an essential element in modern computer software and are thus essential for a successful career and advanced studies in computer science. Topics covered in this course include search algorithms (such as breadth-first, depth-first, A*), game-playing algorithms (such as Minimax), knowledge and logic reasoning, planning methods, probabilistic reasoning, and machine learning.

Student Learning Outcomes
Students successfully completing this course will be able to apply a variety of techniques for the design of efficient algorithms for complex problems.

Required Textbooks and Other Course Materials
Slides of course content will be posted on the website. Recommended textbook: **Artificial Intelligence: A Modern Approach, 4th Edition by Stuart Russell, Peter Norvig**. Price: $82.70 - $206.75 at the UTA Bookstore (https://www.bkstr.com/texasatarlingtonstore/product/artificial-intelligence-991236-1). Note: 3rd or 2nd Edition is also acceptable.

Description of Assignment
There will be one programming assignment in this course provided after the first exam. If you find yourself in an emergency and cannot deliver homework on time, immediately inform the instructor. The Programming assignment must be coded in base versions of C, C++, Python, Java. Alternatively, they can be coded to run on the ACS machine omega (All students will have an account on the ACS machine omega). Note that Omega compatibility is not required (just recommended). If any partial code is provided as part of the assignment, it will generally only be provided in a limited number of languages. However, you are under no obligation or requirement to use it. Additional details will be announced in class. Your submission must be your work only. **Violations of this will not be tolerated and result in severe penalties for all parties involved, in strict compliance with official UTA policy**.
All submissions (written and programming) must be submitted via Canvas. No other methods of submission are accepted under any circumstances.

Late Submission policy for Assignment
The points the assignment graded out of will be provided as part of its description. Assignments submitted late will be automatically penalized, at a rate of **2% of assignment max points per hour late**. Late submission will not be accepted **48 hours** after the due date. The submission due time (and the time the submission link will be available till) will be shown in Canvas. **No submissions will be accepted after the link is no longer available**. Exceptions will only be made for documented emergencies, in strict adherence to UTA policy. Computer/Network crashes, Submission of Incomplete files, Submission of Incorrect Files, Submitting at Incorrect Link are NOT acceptable excuses for late submissions. **No exceptions will be made**. To avoid problems with such crashes and last-minute problems, students are encouraged to submit as early as possible. They are also advised to ensure that their file was uploaded correctly before submitting it. You can always revise your submission till the deadline. If you are unable to work on/submit an assignment due to a valid documented reason (illness, critical family emergencies, military service obligations, observance of major religious holidays, and certain university service commitments) please inform the instructor as soon as possible.

Description of Examinations
There will be two quizzes and two exams spread out throughout the course. The lowest scoring quiz will be dropped from the final grade. No Exams will be dropped from the final grade. The quizzes/exams will be held on campus as in-person quizzes/exams. If the university requires quizzes/exams to be moved online, then they will be held online via the Lockdown browser with Respondus monitoring system. Students will be provided with a handout containing algorithms and other information for their use during the exam (more details will be given in class). Students may also need a non-programmable standard or scientific calculator. No other material is allowed during the exam. **The presence of unauthorized material will be treated as cheating and penalized as such**. Please follow all instructions regarding what information needs to be provided in your answer booklet. Missing information will be penalized. These penalties will **not** be reverted under any circumstances. All work done during the quizzes or exams has to be individual work. **Violations of this will not be tolerated and result in severe penalties for all parties involved, in strict compliance to official UTA policy**.

Quiz/Exam Absence policy.
Absence from Quizzes or exams may be excused, with appropriate documentation, for illness, critical family emergencies, military service obligations, observance of major religious holidays, and certain university service commitments. Requests for excused absence, and documentation for such absences, must be provided as soon as possible. In case of excused absence, a makeup exam will be set up and conducted by the instructor on a date before the last day of finals week. **Even if the reason for an absence/non-attendance is valid, a request for an excused absence/re-attempt will be rejected if provided later than the lecture that immediately follows the quiz.** The dates for all the exams are subject to change. Any changes will be announced in class at least a week in advance. Students are expected to be available till the last day of finals week. No accommodation will be made if the student misses an exam due to being unavailable before the last day of finals week.

Academic Dishonesty Policy
If you are caught colluding or copying in the assignment, quizzes, or the exams the following consequences will be applied.

For the n^{th} offence in the current semester:

- You will be given a score of 0 points for that assignment, quiz, or exam.
- Your final grade will be reduced by n letter grades (Down to a minimum of F)
- An academic integrity violation form will be filed.
    - If you agree to sign the form
        - You will be placed on disciplinary probation for 1 year and a 7-year reportable disciplinary record being created.
        - Additional violations may result in increasing sanctions up to and including suspension or expulsion.
    - If you do not agree to sign the form
        - You will be temporarily given a grade of Incomplete (I)
        - The Office of Academic Integrity will conduct a formal investigation based on evidence provided.
        - Based on decision, Either the grade will be calculated with the penalty and with the consequences discussed above or grade will be calculated without penalties and no forms being filed.

This policy is not up for discussion/negotiation under any circumstances.

Technology Requirements
Students will need to be able to program in C, C++, Python or Java for their programming assignments. They will need to be able to use Canvas to view supplementary material provided by the instructor, view any video material posted by the instructor and to submit assignments. They are also strongly recommended to get used to TEAMS as an alternative way to get in touch with the instructor. If any exams must be moved online, students will have to use the Lockdown browser with the Respondus monitoring system for the exams in which case they will need a computer with a webcam and an internet connection to take their exam.

Grading Information

Grading

You will be assigned a numerical score based on your performance in your assignment and in your quizzes and exams.

Material	Contribution to Final score
Highest of Quiz 1 or Quiz 2	20%
Exam 1	30%
Exam 2	30%
Programming Assignment	15%
Policy Acknowledgement Form	5%

This numeric score is converted to a letter grade according to the following rubric.

Numerical Score	Grade
>= 90	A
>= 70 & < 90	B
>= 50 & < 70	C
>= 40 & < 50	D
Otherwise	F

For the Quizzes, Exams and Assignment, if any tasks were graded incorrectly (a correct answer given less than full credit) or if there is a totaling error, please contact either the TA or the instructor ASAP. Any partial credit obtained for incorrect tasks is not up for discussion/negotiation.
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. **No makeup exams or assignments will be provided for the purpose of bumping up your grade under any circumstances**.

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.

Course Schedule

Week	L. No	Date	Topic
1	1	6/2/2025	Course Details, Overview, Agents
	2	6/4/2025	Solving problems with search, Uninformed Search
2	3	6/9/2025	Uninformed Search (cont.), Informed Search
	4	6/11/2025	Game Playing
3		6/16/2025	QUIZ 1, QUIZ 1 Discussion
	5	6/18/2025	Constraint Satisfaction Problems
4	6	6/23/2025	Knowledge and Logic Reasoning
	7	6/25/2025	First Order Logic
5		6/30/2025	EXAM 1 Material Review
		7/2/2025	EXAM 1
6	8	7/7/2025	Planning
	9	7/9/2025	Planning in the Real World, Probability
7	10	7/14/2025	Probability (cont.) Prior and Posterior probability
	11	7/16/2025	Bayesian Network
8		7/21/2025	QUIZ 2, QUIZ 2 Discussion
	12	7/23/2025	Machine Learning, Decision Tree Learning
9	13	7/28/2025	Real World Decision Trees, Bayesian Classifiers
	14	7/30/2025	Probability Estimations, Nearest Neighbor Classifiers
10	15	8/4/2025	Neural Networks, Backpropagation Learning
		8/6/2025	EXAM 2 Material Review
		8/7/2025	EXAM 2

This schedule is tentative and subject to change at instructor's discretion. Changes will be announced in class. The instructor reserves the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. EXAM 1 will be held at the regular class timing in the same location as lectures. EXAM 2 location, date and time is subject to change by the University. Please visit: https://www.uta.edu/records/calendars/final-exams.php to get the updated date, time, and location information (unless otherwise mentioned, location is the same as lectures). Students should be prepared to be available till the end of Finals Week in case of any changes to EXAM 2 scheduling.

Institutional Information

UTA students are encouraged to review the below institutional policies and informational sections and reach out to the specific office with any questions. To view this institutional information, please visit the Institutional Information page (https://resources.uta.edu/provost/course-related-info/institutional-policies.php) which includes the following policies among others:

- Drop Policy
- Disability Accommodations
- Title IX Policy
- Academic Integrity
- Student Feedback Survey
- Final Exam Schedule

Additional Information

Attendance
Students are expected to attend the Lectures in person. While attendance is not required it is strongly recommended. While the lectures are recorded and posted online through Echo360 system, these are only provided for review purposes and not as a substitute for attending the lectures. If the student misses any of the lectures, it is the student's responsibility to look over the slides/videos/recordings to catch up with the rest of the class and clarify any questions they may have with the instructor.

At the University of Texas at Arlington, taking attendance is not required but attendance is a critical indicator of student success. 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 will be following the attendance policy described above. However, while UT Arlington does not require instructors to take attendance in their courses, the U.S. Department of Education requires that the University have a mechanism in place to mark when Federal Student Aid recipients "begin attendance in a course." UT Arlington instructors will report when students begin attendance in a course as part of the final grading process. Specifically, when assigning a student, a grade of F, faculty must report the last date a student attended their class based on evidence such as a test, participation in a class project or presentation, or an engagement online via Canvas. This date is reported to the Department of Education for federal financial aid recipients.

Emergency Exit Procedures
Should we experience an emergency event that requires evacuation of the building, students should exit the room and move toward the nearest exit, which is given in the Evacuation Route Maps given below. When exiting the building during an emergency, do not take an elevator but use the stairwells instead. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

Evacuation Route Maps: Available Here.

Students should also be encouraged to subscribe to the MavAlert system that will send information in case of an emergency to their cell phones or email accounts. Anyone can subscribe at Emergency Communication System.

Academic Success Center
The Academic Success Center (ASC) includes a variety of resources and services to help you maximize your learning and succeed as a student at the University of Texas at Arlington. ASC services include supplemental instruction, peer-led team learning, tutoring, mentoring and TRIO SSS. Academic Success Center services are provided at no additional cost to UTA students. For additional information visit: Academic Success Center. To request disability accommodations for tutoring, please complete this form.

The IDEAS Center (https://www.uta.edu/ideas/) **(**2nd Floor of Central Library) offers **FREE** tutoring and mentoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. Students can drop in or check the schedule of available peer tutors at www.uta.edu/IDEAS, or call (817) 272-6593.

The English Writing Center (411LIBR)
The Writing Center offers **FREE** tutoring in 15-, 30-, 45-, and 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Register and make appointments online at the Writing Center (https://uta.mywconline.com). Classroom visits, workshops, and specialized services for graduate students and faculty are also available. Please see Writing Center: OWL for detailed information on all our programs and services.

The Library's 2nd floor Academic Plaza (http://library.uta.edu/academic-plaza) offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library's hours of operation.

Librarian to Contact
Each academic unit has access to Librarians by Academic Subject that can assist students with research projects, tutorials on plagiarism and citation references as well as support with databases and course reserves.

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

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