Course Syllabus

Course Information
(course number, course title, term, any specific section title)

Course Prefix, Number, Section: **CS 4365.0U1**
Course Title: **Artificial Intelligence**
Term: **Summer 2023**
Class Time: MW 3pm - 5:15pm (ECSS 2.306)

Professor Contact Information

Professor	Richard Min, Ph.D. MBA, MS/CE, STM, M.Div
Email Address	rkm010300@utdallas.edu
Office Phone	972-883-4522
Office Location	ECSS 4.609
Office Hours	Wednesday 9:30am-11:30am (by appointment, via email, or MS Teams)

Course Pre-requisites, Co-requisites, and/or Other Restrictions
(including required prior knowledge or skills)

CE 3345 or CS 3345 or SE 3345 or TE 3345 or equivalent.

Course Description

CS 4365 - Artificial Intelligence (3 semester credit hours) Basic concepts and techniques that enable computers to perform intelligent tasks. Examples are taken from areas such as natural language understanding, computer vision, machine learning, search strategies and control, logic, and theorem proving. Prerequisite: CE 3345 or CS 3345 or SE 3345 or TE 3345 or equivalent. (3-0) Y

Student Learning Objectives/Outcomes

1. Understand and use uninformed and heuristic search techniques
2. Understand and use local search algorithms.
3. Understand and use constraint satisfaction problems.
4. Understand and use logical inference using the resolution algorithm.
5. Understand and use probabilistic inference in Bayesian networks
6. Understand and use planning
7. Understand and use games with perfect information (adversarial search)
8. Understand and use zero-sum games with hidden information

Required Textbooks and Materials

Artificial Intelligence, A Modern Approach. 3ed. Stuart Russell and Peter Norvig. Prentice Hall, 2010. ISBN-13: 860-1419506989 ISBN-10: 0136042597.
** The textbook resource site (and referred as AIMA): http://aima.cs.berkeley.edu/
This book is referred as [**AI**].

Artificial Intelligence: Foundations of Computational Agents. 2ed. David L. Poole and Alan K. Mackworth. Cambridge University Press, 2017.
(The Textbook is available online: https://artint.info/html/ArtInt.html)

Suggested Course Materials

Logic, Programming and Prolog, 2ed. by Ulf Nilsson and Jan Maluszynski. ©2000 by Nilsson and Maluszynski. Download from http://www.ida.liu.se/~ulfni53/lpp/
(Available online)

Logic for Computer Science and Artificial Intelligence. Ricardo Caferra. © 2011 John Wiley & Sons. ISBN: 978-1-848-21301-2.
(Available online free access via UTD ebook safari)

Introducing Python. Bill Lubanovic. © 2014 O'Reilly Media, Inc. ISBN-13: 978-1-4493-5936-2
(Available online & free via UTD Library => ebook => Safari)

Paradigms of Artificial Intelligence Programming. Peter Norvig
© 2014 Morgan Kaufmann. Web ISBN-13: 978-0-08-057115-7
Print ISBN-13: 978-1-55860-191-8.
(Available online free access via UTD ebook safari)

Knowledge Representation, Reasoning, and the Design of Intelligent Agents. Michael Gelfond; Yulia Kahl. © 2014 Cambridge University Press. Print ISBN: 978-1-107-02956-9

Bayesian Reasoning and Machine Learning by David Barber. © 2012 Cambridge University Press.

Assignments & Academic Calendar

(Topics, Reading Assignments, Due Dates, Exam Dates)

**** Note:** The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.

Week # MW 3-5:15pm	Topic & AI Chapter Reading	Other Topic	Reading	Assessment: & Exam Due date	Due Date: End of Friday
01 – 5/24 W	Syllabus AI ch01	Lisp	AI ch01 AI ch02		See elearning for detail.
02 – ~~5/29 M~~ 5/31 W	AI ch02 AI ch03		AI ch03		The due date for Weekly activity items by end of Friday of each week.
03 – 6/05 M 6/07 W	AI ch04		AI ch04		
04 – 6/12 M 6/14 W	AI ch05		AI ch05		
05 – 6/19 M 6/21 W	AI ch07 AI ch08	Prolog	AI ch07 AI ch08		
06 – 6/26 M 6/28 W	AI ch09		AI ch09		
07 – 7/03 M 7/05 W	AI ch06		AI ch06	Test1 7/05 W	
08 – 7/10 M 7/12 W	AI ch12 AI ch13	Adv Topics (as time permits)	AI ch11		
09 – 7/17 M 7/19 W	AI ch14	Python	AI ch13 AI ch14		
10 – 7/24 M 7/26 W	Adv topics & optional.	ASP			
11 – 7/31 M 8/02 W	AI Ch10-11			Test2 08/02 W	
12 – 8/07 M	Last class				
12 – 8/09 W – 8/10 Th	Final Exam Week	Grade Due 8/15 T			

Grading Policy

(including percentages for assignments, grade scale, etc.)

Letter grades will be assigned as follows:

97-100	A+	94-96	A	90-93	A-
87-89	B+	84-86	B	80-83	B-
77-79	C+	74-76	C	70-73	C-
67-69	D+	64-66	D	60-63	D-
Below 60	F				

Note 1. Each range shown above is inclusive and without any rounding-off. For example, 94-97 for grade A is for the score falling in the range between 94.000 and 96.999 inclusively. The grade of 93.999 is for A-.

Note 2. In elearning, "Running" total in your gradebook shows the current weighted grade based on your graded work only based on what you have submitted and graded. For example, if you have done only Test1, Assignment1, Weekly postings so far (but you have missed Test2 and missed Assignment2 totally), current total grade will be based on only those entries that you have submitted and done.

80% for 2 Tests (40% for each test). Each test will be taken at Test Center (for 1-hour or 2-hour examination). Time and detail of Test will be announced later in elearning. Each student should make a seat reservation prior to each test (as soon as possible) in the beginning of the semester (within the first two weeks). If you need a makeup test, please inform the instructor via email in the beginning of the semester. All exams are closed book and closed notes. Exams will focus more on concepts and less on details. Additional study-material or documentation will be provided to avoid the need for memorization as much as possible. We will likely take all the tests in the testing center as scheduled. You can expect to see a few coding/analysis questions, a few short answer questions and a few multiple-choice questions in each test. Instructor is responsible for grading all the tests.

Any make-up tests will be arranged and scheduled during the same week (usually Tuesdays prior to the actual test date) at the discretion of the instructor. There should be a valid reason for scheduling make-up tests & they need to be coordinated with the instructor, 1-2 weeks prior to the test date except for serious medical condition (with Doctor's or Hospital's certificate will be required as a valid proof. Without it, there will be 15% penalty for any makeup test after the scheduled test date). It is unlikely that curving will be used to boost the final grades. If the instructor decides to do it, only the test scores will be boosted, but the tests' contribution will be clipped at 60%. In other words, curving will NOT make up for the points lost in all other assignments. So, it is extremely important to complete them in timely manner.

20% for Weekly Activity items & Project. Each weekly activity may include weekly reading, weekly labs (usually 1 or 2 labs), weekly reading and essay (your summary or reflection of reading), and/or any bonus activity of the week. (Note. For summer, due to a tight schedule, we may have a reduced weekly activity items to fit for the 10-week schedule.) Each weekly activity item is available by Monday 8am and is due by Friday 11:59pm of the week. No late submission is accepted.

You are expected to start working on them as soon as they are posted. Do not expect us to rescue you on the day of submission. You can upload each item many times but the last submission will be graded. No Late submission is accepted. My advice is to submit whatever you have done (your best effort) before the due and/or by the due date, and to seek for any further discretion and/or consideration if you may need. All these weekly activity items should be done in Unix, Linux or Mac, and you will hand-in your projects directly in Linux.

Submit each activity item through elearning (each item in the week's activity folder). More details on Weekly Activity, Requirement, and Submission steps will be given with eLearning. For some activity item (e.g., lab), TA may schedule a demo session and you are required to schedule your demo with TA (for 5-10 minutes) and do your demo to TA in a week after the due date. If you have any conflict for the demo schedule, you may do the demo to the instructor (and/or you record your demo in a video format using your webcam using MS Teams, elearning Collaborate, WebEx, or video recording of your demo (to be uploaded to learning and to notify TA).

Note. If you need a quick response for an urgent issue or concern, you may send an email to instructor or TA directly via email (instead of posting here) to get a quicker response and/or immediate attention.

An instructor who believes a student has committed an act of **plagiarism** should take appropriate action, which includes the issuing of a "penalty grade" (that is, F for the course) for academic dishonesty. For any "minor" plagiarism charge, the maximum letter grade for the course would be B+ or lower.

Course & Instructor Policies

(make-up exams, extra credit, late work, special assignments, class attendance, classroom citizenship, etc.)

Instructor is responsible for grading all the tests. TA will be responsible for grading all weekly activity items (any assignment or project). So, contact the TA directly for any grading related discrepancies (and cc to the instructor). It is not possible to give a detailed feedback for each weekly activity item or test question due to large number of students enrolled in our classes. If you need more details/clarification, you are encouraged to meet the TA/instructor via online during office hours & get personal attention. Do not rely on email alone to get the full response. If you are stuck with your assignment, it is better to turn in what you have and send us email. We will revise your submission and give some guidance. Your next submission will override the previous submission - TA will always grade the latest submission for each project. You can use email to get help for weekly assignments. Include the detailed problem description & applicable error messages, zip all your source files and include it with your email too. Do not just say "my program does not work" and expect us to figure out everything - you need to help us to help you efficiently. We expect to complete grading assignments (projects), weekly activities or quizzes, and tests in a week or so. However, when the schedule gets too busy, it can be as long as 2 weeks before the grades are assigned. It is the students' responsibility to review the grade details when they become available and follow up for clarifications if needed.

Make-up exams

Any make-up tests will be scheduled during the same week (usually one or two days prior to the actual test date) at the discretion of the instructor. There should be a valid reason for scheduling make-up tests and they need to be coordinated with the instructor, 1-2 weeks prior to the test date except for serious medical condition (with Doctor's or Hospital's certificate will be required as a valid proof). Without any valid reason, there will be 15% penalty for any makeup test scheduled after the scheduled test date.

Extra Credit

Please check for any extra or bonus credit work posted in elearning.

Late Work

No late submission of any work is accepted unless stated otherwise.

Special Assignments

Not Applicable or check with Instructor.

Classroom Citizenship

Please review the UTD policy and guideline on Student behavior and conduct, academic honesty and integrity in https://www.utdallas.edu/conduct/integrity/ and UTD BAIT team in https://www.utd.edu/conduct/bait/

Also note that all the course materials are only for your individual and personal use and for this course. Do not share or redistribute any of the course materials in any form or means with other. Do not make any of the course materials available via Internet or web site (e.g., git or github, tutorial or quizlet site).

Class Participation & Attendance.

For in-class course or especially for online course: it will be tracked and assessed via your weekly activity items and tests. These items will be counted as your weekly class-participation via elearning and online.

Off-campus Instruction and Course Activities

(Below is a description of any travel and/or risk-related activity associated with this course.)

Not Applicable

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

Academic Support Resources

The information contained in the following link lists the University's academic support resources for all students.

Please see http://go.utdallas.edu/academic-support-resources.

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

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