Course	**CS 4365 Artificial Intelligence**
Professor	Sanda Harabagiu
Term	Spring 2025
Meetings	MW 2:30-3:45 PM ECSS 2.412

Professor's Contact Information

Office Phone	(972) 883-4654
Office Location	ECSS 3.411
Email Address	sanda@utdallas.edu
Office Hours	MW 7:00PM-8:00 PM on eLearning Blackboard Collaborate
Other Information	Class Web Page: www.utdallas.edu/~sanda/courses/cs4365/cs4365.html

General Course Information

Pre-requisites, Co-requisites, & other restrictions	CE 3345 or CS 3345 or SE 3345 Algorithm Analysis & Data Structures *Excellent programming skills*
Course Description	The undergraduate Computer Science class CS 4365 on Artificial Intelligence provides an introduction to the concepts and techniques that enable computers to perform intelligent tasks. This course is intended to prepare you to design, develop and use intelligent agents capable of a variety of rational tasks. Models of intelligent behavior required for solving problems or playing games are studies and exemplified. The way knowledge is formalized and used in inference is explained and tested. Examples of constraint satisfaction and planning are provided. Moreover, probabilistic reasoning is explored. Discussion of some of the state-of-the-art issues, e.g. generative artificial intelligence are also presented. More information is available at: *http://www.utdallas.edu/~sanda/courses/class_description/html_ai4365/cs4365.html*
Learning Outcomes	CS 4365 focuses on the basic AI techniques used in intelligent systems. Students will understand the basic structure of several intelligence systems. These systems will be used for understanding how uninformed search techniques can solve problems. Students will also gain knowledge and experience with informed search and heuristics. In addition, local search techniques will be discussed and exemplified. Students will understand several forms of game playing as adversarial search. Students will understand and use constrain satisfaction problems as well. The study of knowledge representations and inference will enable students of explore several forms of inference in several logic languages. Probabilistic inference shall be introduced and students will gain experience using it. The course will also enable students to gain experience with planning.
Suggested Texts, Readings, & Materials	Artificial Intelligence: a Modern Approach (Fourth Edition) by Stuart Russell and Peter Norvig. Prentice-Hall, Inc. http://aima.cs.berkeley.edu/ As provided in class/class web page.

Instructional Mode	**F**ace-to-face. Only in exceptional cases the class will be held online.
Expectations	Students in this class are expected to **study both** the lecture material (slides and discussed handouts) as well as the examples provided in class. Home-works and Examinations are individual work, while projects are teamwork.

Class Participation

Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. Successful participation is defined as consistently adhering to University requirements. Randomly, the attendance shall be noted. Questions and discussions regarding the class material shall take place ONLY during the Professor's office hours, **not through emails.** Questions and discussions regarding the home-works shall take place ONLY during the TA's office hours, **not through emails.** It is highly advisable to attend from the beginning of office hours to the end of them – to hear all the discussions that are taking place. When raising a question during office hours, students should first present what they have tried to do to solve their doubts/problems, in this way everyone can learn from their experience – and they can be helped in solving the home-works or projects. Students should not email the TA questions about the home-works. Questions about a homework grade or examination grade will be answered ONLY within 14 days AFTER the grade is issued by the Faculty/TA. Failure to attend office hours and requesting help through emails at the last minute will not be honored by the Professor or the TA.

Class Materials

The instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course; however, these materials are for registered students' use only and are copyrighted by the Professor. All materials used in this class, including slides, home-works and exams are copyrighted by the Professor and no student is allowed to post on the Internet any of this material, even after the end of class. No student is allowed to post the solutions of their home-works or projects on the Internet. Using any home-works, exams or projects that were given in this class in previous years is considered cheating and will automatically lead to a grade of ZERO.

Course Policies

Grading (credit) Criteria	Home-works: 35% Projects: 20% Mid-Term Exam: 20% Final Exam: 20% COMET behavior commitment/ Class participation: 5%
Make-up Exams	There will be **no** make-up exams
Extra Credit	There will be **no** extra-credit assignments
Late Work	If the homework is turned in after the deadline, the grade for the homework shall be reduced by 20% for the first 24 hours, 50% for the next 24 hours and shall not be accepted after 48 hours. **NO** late submissions will be allowed for the exams!!!
Special Assignments	Students will have special assignment for projects
Class Attendance	Class attendance is expected.
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."* This also means that grades are **earned**, not negotiated. For example, requesting a grade the student feels they "need" instead of the earned grade is a violation of the Comet Creed, and will lead to a reduction of the grade. Email abuse will be punished with a reduction of final grade per incidence. Discussions with the instructor or TA will take place **ONLY** during office hours, on eLearning.

Grade Cutoffs

A+	100.00 – 97.00
A	96.99 – 90.00
A-	89.00 – 86.00
B+	85.99 – 81.00
B	80.99 – 77.00
B-	76.99 – 72.00
C+	71.99 – 68.00
C	67.99 – 63.00
D+	62.99 – 58.00
D	57.99 – 53.00
D-	52.99 – 48.00
F	47.99 – 0.00

Assignments & Academic Calendar

January 22 2025	Introduction to Artificial Intelligence	Syllabus Issued
January 27 2025	Intelligent Agents	
January 29 2025	Agent Architecture	
February 3 2025	Problem Searching Agents: Search Basics	Homework 1 issued
February 5 2025	Uninformed Search Methods	
February 10 2025	Informed Search Methods: Best-first	
February 12 2025	Informed Search Methods: A* hill-climbing	Homework 2 issued
February 17 2025	Local Search – hill-climbing	Project-1 Selection
February 19 2025	Local Search – other algorithms	
February 24 2025	Introduction to Game Playing	Homework 3 issued
February 26 2025	Game Playing Techniques	
March 3 2025	Special Games	
March 5 2025	Constraint Satisfaction	
March 10 2025	Logic and Knowledge	MID-TERM1
March 12 2025	Propositional Logic	Homework 4 issued
March 17-23 2025	*Spring Break*	
March 24 2025	Inference in Propositional Logic	
March 26 2025	First Order Logic	
March 31 2025	Unification	
April 2 2025	Inference in First Order Logic	Homework 5 issued
April 7 2025	Resolution	
April 9 2025	Knowledge Representation	
April 14 2025	Uncertainty	Project-2 Selection
April 16 2025	Reasoning with uncertainty	
April 21 2025	Bayesian Networks	Homework 6 issued
April 23 2025	Probabilistic Reasoning 1	
April 28 2025	Probabilistic Reasoning 2	
April 30 2025	Planning	
May 5 2025	Planning with Reinforcement Learning	MID-TERM 2
May 7 2025	Generative AI	

These descriptions and timelines are subject to change at the discretion of the Professor.