

CSC 4444 - ARTIFICIAL INTELLIGENCE

FALL 2020, Fully Web-based course.

Class Time: Monday and Wednesday 3:30pm to 4:50pm

Access Zoom link for online lectures and course materials on your "mysu" Moodle site

Instructor: Prof. Jianhua Chen

Computer Science & Engineering Division

School of EECS

e-mail: cschen@lsu.edu

Online office hours: Tuesday and Thursday 2 pm to 3 pm

Text:

Artificial Intelligence - A Modern Approach (AIMA) by S. Russell and P. Norvig, 4th Edition

Web link for renting the (digital) text book: <https://www.vitalsource.com/referral?term=9780134671932>

Artificial Intelligence (AI) is an important research area which has attracted researchers from multiple disciplines. Research in AI aims at understanding the nature of intelligence and building intelligent agents which are computational systems that behave intelligently. AI can be said as the science of making machines intelligent. Artificial Intelligence research has found many successful real life applications in engineering, science, health care, finance, education, social media and entertainment.

The goal of this course is to introduce the students to the fundamentals of Artificial Intelligence. Through the course the students should get a general knowledge of the AI subject; develop a good understanding of several major topics of AI, and develop the design/programming skills for building intelligent agents. The coverage will be balanced between theory and applications.

Main Topics:

1. Introduction to AI (AIMA Chapters 1-2).
2. Problem Solving by search, and game playing (AIMA Chapters 3-5)
3. Knowledge and reasoning: Logical Agents (AIMA Chapter 7)
4. Handling Uncertainty, Probabilities and Bayesian Methods. (AIMA Chapters 12, 13).
5. Machine Learning (AIMA Chapter 19, and part of Chapter 21 on Neural Networks and Deep Learning).
6. Natural Language Processing (AIMA Chapter 23, and possibly part of Chapter 24).

Form of the Course:

The main format of the course would be online Zoom lectures by the instructor. However we may allocate some online class meeting time for groups to work together on their group projects, etc. At the end of the semester, the **final exam** will be done in the form of group project presentations/demos, plus the written project report. So students are encouraged to form groups early in the semester for the group project activity.

Grading:

Homeworks and programming assignments		15%
Mid-term Exam (Close-book)	Wednesday Oct. 9, 2020	30%
Quiz (Close-book)	Wednesday Nov. 18, 2020	20%
Final Exam (Group presentations and demos)	Thursday Dec. 10, 2020 (5:30pm - 7:30pm)	20%
Group project activity and written report	Report due Friday Dec. 4, 2020 (by 5pm) Project topic and abstract due Wednesday Oct. 14 (by 5pm)	15%

Grading scales:

For graduate students:

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
97-100	92-96	88-91	84-87	80-83	76-79	74-75	70-73	65-69	62-64	58-61	55-57	0-54

For undergraduate students:

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
96-100	90-95	85-89	82-84	78-81	75-77	72-74	68-71	65-67	62-64	58-61	55-57	0-54

Academic Honesty Requirements

Except for group project/presentations, the mid-term exam/quiz and homeworks are all individual assignments that must be done **independently** by each student. In accordance with the LSU policy regarding academic honesty, any act of cheating will be prosecuted vigorously.

For group project, we encourage the members of the same group to share ideas, and to collaborate on the project and the presentation.

Late homeworks/programs are accepted if the submission is no later than 3 days after the due date (holidays and weekends count). A 10 points penalty will be deducted for each day of lateness.

Homework submission and grading would be done online using the Gradescope system. So students would need to create an account on Gradescope, and sign the privacy consent form on csc4444 course Moodle site.

Programming environment for Application Development (group project):

We are flexible regarding the implementation platform for the group project. Your group project could be a mobile application, or web-based, or a stand-alone system, either way is fine.

Programming environment for individual programming assignment:

We would require ALL **individual** programming assignments be done using Python - preferably using Ipython Jupyter notebook.