

CS 404: Artificial Intelligence

Spring 2023

Lectures: Tuesday: 14:40–16:30 (FMAN 1099), Wednesday: 17:40–18:30 (FENS G077)

Zoom link: <https://sabanciuniv.zoom.us/j/94382815945>

Instructor: Esra Erdem

TAs: Aysu Boğatarkan, Baturay Yılmaz, Müge Fidan

LAs: Efe Öztaban, Giray Coşkun

Office hours: Announced at SUCourse+, with relevant Zoom links.

Course description. This course provides an introduction to Artificial Intelligence (AI). In this course we will study a number of theories, mathematical formalisms, and algorithms, that capture some of the core elements of computational intelligence. We will cover some of the following topics: search, problem solving, games, logical representations and reasoning, automated planning, representing and reasoning with uncertainty, decision making under uncertainty, learning, robotics, and machine ethics.

Course objective. To give an understanding of some of the fundamental ideas in AI,

Prerequisites/Preferences. An introductory course to computing (like CS201) is required. A good background on discrete mathematics, probability, data structures, and algorithms is preferred for a better understanding of the topics.

Recommended textbook. *Artificial Intelligence: A Modern Approach* by Stuart Russell and Peter Norvig. 3rd/4th Edition. (<http://aima.cs.berkeley.edu/>.)

Assignments. There will be five assignments, each involving a programming component and a written component (typeset using LaTeX).¹ Each student should write up the solutions on her/his own and should be able to explain the solutions to the instructor and/or the teaching assistants during the demo sessions. Late submissions will not be accepted.

Quizzes. Quizzes will be given almost every week.

Exams. There will be two exams: one midterm exam (that consists of an online exam and a take-home exam) and one final exam (that will be in-person on-campus during the finals period). There will be only one make-up exam (to be considered instead of one missed exam): it will be given on the next business day after the final exam, and only if requested with an official report before the final exam. In the exams, students are responsible for the material presented in the lectures and covered in the assignments, exercises and quizzes.

Grading. Grades will be determined by the assignments (35%), the two-part midterm exam (15%), and the final exam (50%). The quizzes will contribute to your overall grade (3%) as a bonus. Assignments will contribute equally.

¹You can use Overleaf for editing: <https://www.overleaf.com/>.