Georgia State University — CSC/DSCI 4810/6810

Course Syllabus for CSC/DSCI 4810/6810: *Artificial Intelligence*

Spring 2023

Time

10am–11:45am on Mondays and Wednesdays

Room

Sparks Hall, Room 427

Instructor

Name: Murray Patterson (he/him)
Email: mpatterson30@gsu.edu
Office: 25 Park Place, Room 1807
Webex: `https://gsumeetings.webex.com/meet/mpatterson30`

Office Hours[1]

- Fridays from 10am–noon in my office or via Webex (I will also be online during this time)
- After class: I will remain in the classroom
- By appointment: please discuss with me or send me an email to arrange a time

Teaching Assistants (TAs)

Name: Weizhen Liu
Email: wliu25@student.gsu.edu

Prerequisites

CSC 2720 or DSCI 2720 with a grade of C or higher

[1] **Engineer in Residence Career Office Hours**: Our Meta Engineer in Residence, Batya Zamansky, will be hosting Career Office Hours every weekday from 3–4pm. In addition, Tuesdays and Wednesdays from 2–3pm are dedicated interview practice time. These times may change as the semester goes on, so please join the Discord for up-to-date information or if you want to set up a different time to talk. Office hours start on Monday, January 9th, and are located in 25 Park Place, room 742. Career Office Hours are a great time to ask any career related questions to a Meta software engineer. Whether your questions are about resumes, applications, or interviews, or if you want to brainstorm about side projects, or just talk about anything else in that area, office hours are open! You can join our discord channel here (`https://discord.gg/WP6M7H3KJq`) for further information.

Reference Materials

- Textbook: Artificial Intelligence: A Modern Approach, 4th US Edition. Stuart Russell and Peter Norvig, Pearson Publishing, 2021.
- Author-maintained website: `http://aima.cs.berkeley.edu/`
- Other online resources will be provided as the course proceeds

Course Content

Georgia State University iCollege — `https://icollege.gsu.edu`

Course Overview

Welcome to CSC/DSCI 4810/6810 at Georgia State University! The objective of this course is to provide a better understanding of the underlying concepts of Artificial Intelligence (AI). Various topics will be covered, including search, heuristics, constraint satisfaction, Bayesian reasoning, machine learning (ML) and natural language processing (NLP). In the latter part of the course, the focus will shift towards project work on a topic of choice around inclusive AI, which involves concepts such as bias, ethics and responsible AI, among others.

Course Structure

- **Lecture** — Classes will be conducted in a traditional lecture format.
- **Homework** — Weekly assignments will build on the lecture content of the week.
- **Readings** — Course textbook pages, relevant articles and additional supporting content will be assigned for students to read.
- **Discussions** — Opportunities to share questions about key concepts, homework assignments, and more.

Exams

There will be a midterm exam in this course. This exam will involve questions, problems, or programming assignments which cover lectures, homework assignments, and readings.

Grade Scale*

Grade	Point Equivalent
A+	≥ 97
A	≥ 90
B+	≥ 87
B	≥ 80
C+	≥ 77
C	≥ 70
D	≥ 60
F	< 60

Grading (*subject to change*)

- Homework Assignments (40%)
- Midterm Exam (20%)
- Final Project (40%)

Course Schedule (*subject to change*)

	Topic	**Reading**	**Homework***
Week 1	Syllabus and Introduction		
Week 2	Introduction & Intelligent Agents	Ch. 1/2†	HW 1
Week 3	Uninformed Search	Ch. 3.1–3.4	HW 2
Week 4	Informed Search	Ch. 3.5–3.6	HW 3
Week 5	Adversarial Search & Games	Ch. 5	HW 4
Week 6	Constraint Satisfaction	Ch. 6	HW 5
Week 7	Review & **Midterm Exam**		
Week 8	Probability & Bayesian reasoning	Ch. 12/13	HW 6
Week 9	Machine Learning (ML)	Ch. 19	HW 7
Week 10	Natural Language Processing	Ch. 23	HW 8
Week 11	Philosophical Considerations	Ch. 27	HW 9
Week 12	Project Work ...		

* Here, "Week" essentially means two consecutive class days (to allow a shift forward in the case of a holiday, for example)

† Artificial Intelligence: A Modern Approach, 4th US Edition. Stuart Russell and Peter Norvig, Pearson Publishing, 2021.

Make-up Policy

Exams

There are no make-up exams unless the student missed the exam due to a pre-arranged excused absence *e.g.*, participation in a GSU sports event, observance of a religious holiday, or an emergency, etc. In all cases, documentation needs to be provided before or after, *e.g.*, a note from the coach, a note about the religious holiday, or a slip from the doctor, etc. — only official excuses will be accepted. **Any uncoordinated, unexcused missed exam will result in a score of zero for that exam**.

Homework

Each homework assignment is due at the beginning of class on the due date. Late submission will result in an automatic 50% of the assignment score, with few exceptions.

Academic Honesty Policy

In academics, intellectual property is extremely important. This is one reason we hold students to the tenets of the Academic Honesty Policy — other topics related to student conduct are available at `https://codeofconduct.gsu.edu/`. But intellectual property goes beyond that when it comes to the materials created by your instructor and the publisher of your textbook. Your instructor has spent a

great deal of time and energy developing materials for this course, and the publisher holds a copyright to all materials associated with the textbook. Please be aware that the GSU community takes this very seriously.

It is for this reason that a recent senate meeting has passed a special policy regarding copyright, found at `https://cetl.gsu.edu/services/instructional-support/constructing-a-syllabus/`. This policy implies that the selling, sharing, publishing, presenting, or distributing of instructor-prepared course lecture notes, videos, audio recordings, or any other instructor-produced materials from any course for any commercial purpose is strictly prohibited unless explicit written permission is granted in advance by the course instructor (note that this includes homework assignments, labs, exams or their solutions). This includes posting any such materials on websites such as Chegg, Course Hero, OneClass, Stuvia, StuDocu and other similar sites. Unauthorized sale or commercial distribution of such material is a violation of the instructor's intellectual property and the privacy rights of students attending the class, and is prohibited.

Sharing of any materials from the textbook, such as questions from publisher provided quizzes, is likewise prohibited.

Moreover:

- All assignments are supposed to be individual work, and any collaboration or cheating would result in a zero score for the assignment — this includes obtaining answers from search engines such as Google, generative AI tools such as ChatGPT, and websites such as Chegg, Course Hero, etc., mentioned above.
- A second incident of dishonest work will result in an automatic F grade for the class.

Course Evaluations

Your constructive assessment of this course plays an indispensable role in shaping education at Georgia State. Upon completing the course, please take the time to fill out the online course evaluation.

COVID-19 and other serious communicable infections

The university is continuously monitoring the situation, and revising its policy accordingly — up-to-date information can be found at `https://covidinfo.gsu.edu/`. Currently, classes will be fully face-to-face, with no online option. I will let you know as soon as possible if any changes in course modality occur.

Extended Absences

For students, the Dean of Students' Office will continue to provide faculty with notifications when students file **Professor Notification for Absences (PNAs)**. This notification indicates that the Dean of Students office has reviewed the documentation related to a student's medical circumstances. For more information about this, and how to submit such a notification, see `https://deanofstudents.gsu.edu/student-assistance/#professor`.

Students with Disabilities

Students who wish to request accommodation for a disability may do so by registering with the Access and Accommodation Center. Students may only be accommodated upon issuance by the Access and Accommodation Center of a signed **Accommodation Plan** and are responsible for providing a copy of that plan to instructors of all classes in which accommodations are sought.

Basic Needs Statement

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable us to provide resources that we may possess. The Embark program at GSU provides resources for students facing homelessness and Panther's Pantry provides resources for students facing food insecurity.

Disclaimer

The course syllabus provides a general plan for the course — deviations may be necessary.