CS 480: Computing Methods in Economics – Spring 2024

Draft syllabus subject to change

Calendar

Week	Date	Topics	Readings	Deadlines and Exams
1	January 17	Syllabus and policies		
2	January 22	Growth Model	Chapter 1	
	January 24			
3	January 29	Neural Nets	Chapter 2	
	January 31			
4	February 5	Partial Equilibrium	Chapter 3	Homework 1 due by Thursday 6:00 pm
	February 7			
5	February 12	Review for midterm 1		Midterm 1 on Wednesday
	February 14			
6	February 19	Transportation	Chapter 4	
	February 21			
7	February 26	Thrift Model	Chapter 6	Homework 2 due by Thursday 6:00 pm
	February 28			
8	March 4	Review for midterm 2		Midterm 2 on Wednesday
	March 6			
9	March 11	Spring Break: No classes this week		
	March 13			
10	March 18	Portfolio Model	Chapter 7	
	March 20			
11	March 25	General Equilibrium	Chapter 8	
	March 27			
12	April 1	Cournot Duopoly	Chapter 9	Homework 3 due by Thursday 6:00 pm
	April 3			
13	April 8	Review for midterm 3		Midterm 3 on Wednesday
	April 10			
14	April 15	Genetic Algorithms	Chapter 11	
	April 17			
15	April 22	Agent-Based Models	Chapter 14	
	April 24			
16	April 29	Project presentations		
		Final exam: Friday, May 3, 3:00 pm – 5:30 pm https://registrar.emory.edu/faculty-staff/exam-schedule/spring-2024.html		

Instructor

Instructor: Prof. Davide Fossati
Email: davide.fossati@emory.edu
Office location: MSC W410
Office hours: Monday and Wednesday, 3:45-4:30 pm

Course description

This course introduces students to the use of advanced computer science techniques for the economic analysis of observational data. Each topic will include the presentation of an economic model, and its computational implementation using software tools and programming languages.

Class Meetings

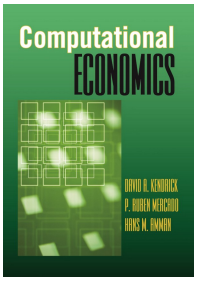
Monday and Wednesday, 5:30 pm – 6:45 pm, room MSC W201.

Technology

Requirements. Each student should have consistent access to a personal desktop or laptop computer with either Linux, Mac, or Windows operating system; a webcam; and a stable and reliable Internet connection. Students are responsible to maintain their computing equipment in good working condition at all times. **Technical issues with personal computer equipment and Internet connection are not valid reasons for requesting deadline extensions or other accommodations.**

Canvas. We will use Canvas (https://canvas.emory.edu) as a repository for reference documents and lecture notes.

Textbooks and resources



David Kendrick, Ruben Mercado, Hans Amman. *Computational Economics.*

Students are expected to take notes and use them together with the examples and additional resources provided in class and/or posted on the course website. Additional online resources will be linked on the course website.

Assessment and grading

- **Homework assignments:** 15% (3 assignments, 5% each)
- **Peer evaluations:** 5%
- **Exams:** 60% (3 midterm exams: 15% each; final exam: 15%)
- **Project**: 20%

Drop policy for 1 exam. The lowest-scored (or missed) exam for each student will be dropped and replaced with the average of the other three exams.

At the end of the semester a letter grade will be assigned according to the following table:

Letter grade	Minimum score
A	93.3
A-	90.0
B+	86.6
B	83.3
B-	80.0
C+	76.6
C	73.3
C-	70.0
D+	66.6
D	60.0
F	0

Any request to change the score of a graded item (homework assignment or exam) should be submitted within **one week** after the graded item is returned to the student. **No change request will be considered after this deadline**. A regrade may result in no change, a higher score, or a lower score, whichever reflects a more accurate grade for the item. Hint: double check your graded items right away, which is also a great learning opportunity to catch up with topics you might have misunderstood.

Teamwork

The ability to work effectively in teams is an important skill. In this course, you will have ample opportunity to practice this skill.

- **In-class exercises** should be done in pairs (teams of 2 students), unless otherwise directed.
- **Homework assignments, peer evaluations, and exams** should be done individually.
- The **final project** should be done in teams of 2-3 students each.

Academic integrity

All students are expected to be familiar with and follow Emory's Honor Code, particularly Article 4: Academic Misconduct.
http://catalog.college.emory.edu/academic/policies-regulations/honor-code.html

The Computer Science Department has also a specific policy regarding the submission of computer code.
https://www.cs.emory.edu/undergraduate/general-information/spca/

Appropriate citation of all external sources is required. This also includes the acknowledgment of any collaboration or assistance.

Also remember that deliberately **providing false information** for personal gain is a serious violation of academic integrity and will not be tolerated.

Violations of academic integrity will result in immediate referral to the Honors Council. Penalties will depend on the severity of the transgression and each individual student's history of transgressions. Penalties range from a negative score on an assignment or test, failing the course, or even more severe university-wide actions such as suspension or expulsion from the university.

Help and Support

First of all, make sure you interact with the community using the Ed Discussion system. Post your questions there, and also try to answer other students' questions if you can. For one-on-one help, you can consult the instructors and teaching assistants. Make sure you seek help early if needed, and try to keep up with the course material at all times. When you ask for help, make sure you don't cross the boundaries of cheating or excessive collaboration.

Emory University offers accommodations to students with disabilities. If you anticipate issues related to the format or requirements of this course, please meet with the instructor to discuss ways to ensure your full participation in the course. If you determine that disability related accommodations are necessary, please register with the Department of Accessibility Services (https://accessibility.emory.edu) as soon as possible.

Students seeking academic accommodations for religious observance should submit their requests to the instructor as early as possible in advance. If you have questions or concerns about your request, you may contact the university’s Office of Spiritual and Religious Life (OSRL), the Ombuds Office, or the Office of Institutional Equity and Compliance (OIEC). Academic accommodations for religious observance do not relieve students of responsibility for the completion of any part of the coursework they may miss as the result of a religious observance.