



Economics 3620: Mathematics for Economists  
Spring Semester 2023  
Monday - Wednesday/ 1:25 PM-2:45 PM

**Instructor:** Yazgı Genç

**Email:** yazgi.genc@utah.edu

**Office Hours:** Monday 3:00 PM – 5:00 PM and by appointment

**Office Location:** Gardner Commons 4<sup>th</sup> floor, study area

### **Required Materials**

Chiang, A. C., and K. Wainwright (2004) *Fundamental Methods of Mathematical Economics*, 4th Edition (or any earlier edition), McGraw-Hill Education

The textbook can be found at the Campus Store, [www.used.addall.com](http://www.used.addall.com) or in the University library.

### **Course Description**

This course will introduce students to some of the most important mathematical tools to formulate and solve problems in economics. For this purpose, we will cover linear algebra, differential calculus, and optimization problems. It is intended to cover these mathematical concepts that will be studied in the context of their applications to economics. Also, it is aimed to develop students' abilities to use mathematical techniques to solve problems in intermediate and advanced economics courses.

### **Course Outcomes**

At the end of this semester, students would be expected to understand basic mathematical techniques used in economics such as linear algebra, derivative, differential, optimization with and without constraints, and matrix algebra and be prepared to take courses in the Economics major that have 3620 as a prerequisite.

### **Teaching and Learning Methods**

This class uses a combination of lectures, assignments, and exams. Class attendance and participation are integral aspects of this course. Like any other quantitative class, reviewing class materials and completing assignments will be helpful to understand the course material.

**Communication Policy:** Please notify me *ahead of time* if you know you will not be able to fulfill any course requirements by sending an email to me. If you miss an exam or a submission deadline, as long as you can document why you missed them, there can be a make-up possibility.

### **Important Dates**

Classes begin.....	Wednesday, January 11
Martin Luther King Jr. Day.....	Monday, January 16
Last day to add, drop (delete), elect CR/NC, or audit classes .....	Friday, January 20
Presidents Day holiday .....	Monday, February 20
Last day to withdraw from classes.....	Friday, March 3
Spring break .....	Sun.-Sun., March 5-12
Last day of class.....	Monday, April 24
Final Exam.....	Monday, May 1

### **Course Policies**

**Attendance Policy:** You will not be graded on attendance; however, attending class can help your grade. Research strongly links class attendance and academic performance, and your participation in class helps the instructor set appropriate expectations for the course. If, for any reason, you cannot do an exam or complete the course, please notify me *ahead of time*.

**Grading Policy:** Grades will be calculated based on the following required work:

- **Problem sets (20%):** There will be 5 problem sets (4 points each)
  - Problem set 1, due on Wednesday, February 1.
  - Problem set 2, due on Wednesday, February 22.
  - Problem set 3, due on Wednesday, March 22.
  - Problem set 4, due on Wednesday, April 12.
  - Problem set 5, due on Monday, May 1.
- **Midterm Exam (40%) (20 points each)**
  - Midterm 1, Wednesday, March 1
  - Midterm 2, Monday, April 10
- **Final Exam (40%)**

**Scale Score:** A 93-100 ; A- 90-92 ; B+ 87-89 ; B 83-86 ; B- 80-82 ; C+ 77-79 ; C 73-76 ; C- 70-72 ; D+ 67-69 ; D 63-66 ; D- 60-62 ; E 0-59

**Late Assignments:** There will be assignments. Late assignments will be accepted up to a week late, though at a penalty. Your grade goes down immediately (5 points) and continues to go down until you turn in the paper (5 points will be deducted for each day the assignment is late). This

policy may be waived in the case of prior arrangement with me, an emergency, and as required by university policy.

**Food & Drink:** You can eat and drink in the class without disturbing others

**Electronic Devices in Class:** Please avoid using your electronic devices for non-class-related activities during class time.

### Course Schedule

<b><u>Week</u></b>	<b><u>Date</u></b>	<b><u>Topic</u></b>	<b><u>Textbook</u></b>
1	01.09.2023	<i>(No Class)</i>	
	01.11.2023	1. The nature of mathematical economics and economic models	Chapter 1,2
2	01.16.2023	<i>Martin Luther King Jr. Day (No Class)</i>	
	01.18.2023	1. The nature of mathematical economics and economic models	Chapter 1,2
3	01.23.2023	2. Equilibrium analysis in economics	Chapter 3
	01.25.2023		
4	01.30.2023	3. Matrices, vectors, matrix operations	Chapter 4
	02.01.2023		
5	02.06.2023	4. Matrix operations and determinants	Chapter 4
	02.08.2023		
6	02.13.2023	5. Non-singularity of a matrix	Chapter 5
	02.15.2023		
7	02.20.2023	<i>Presidents Day (No Class)</i>	
	02.22.2023	6. Inverse matrix and Cramer's rule, Matrix applications	Chapter 5
8	02.27.2023	7. Matrix Applications	Chapter 5
	03.01.2023	Midterm-I	
9	03.06.2023	<i>Spring Break (No Class)</i>	
	03.08.2023		
10	03.13.2023	8. Comparative statistics and derivation	Chapter 6
	03.15.2023		
11	03.20.2023	9. Rules of differentiation and differentials	Chapter 7,8
	03.22.2023		
12	03.27.2023	10. Total Derivatives	Chapter 8
	03.29.2023		
13	04.03.2023	11. Use of total derivatives and applications	Chapter 8
	04.05.2023		
14	04.10.2023	Midterm-II	
	04.12.2023	12. Optimization	Chapter 9,11
15	04.17.2023	13. Optimizing multivariable functions	Chapter 9,11
	04.19.2023		
16	04.24.2023	14. Optimization with constraints: Lagrange-Multiplier method	Chapter 12

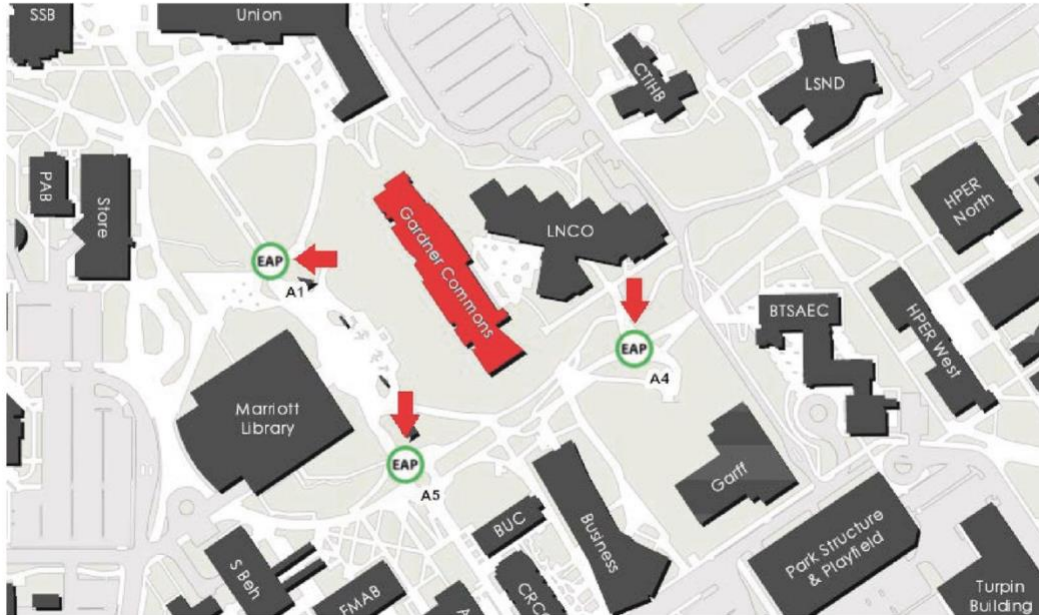
## University Policies

- 1. *The Americans with Disabilities Act.*** The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, (801) 581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.
- 2. *University Safety Statement.*** The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit [safeu.utah.edu](http://safeu.utah.edu).
- 3. *Addressing Sexual Misconduct.*** Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).
- 4. *Wellness Statement*** Personal concerns such as stress, anxiety, relationship difficulties, depression, cross cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at [www.wellness.utah.edu](http://www.wellness.utah.edu) or 801-581-7776.
- 5. *Veterans Center*** If you are a student veteran, the U of Utah has a Veterans Support Center located in Room 161 in the Olpin Union Building. Hours: M-F 8-5PM. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources: <http://veteranscenter.utah.edu/>. Please also let me know if you need any additional support in this class for any reason.

6. ***LGBT Resource Center*** If you are a member of the LGBTQIA community, I want you to know that my classroom is a safe zone. Additionally, the U of Utah has an LGBT Resource Center on campus. They are located in Room 409 in the Oplin Union Building. Hours: M-F 8- 5PM. You can visit their website to find more information about the support they can offer, a list of events through the center and links to additional resources: <http://lgbt.utah.edu/>. Please also let me know if there is any additional support you need in this class.
7. ***Learners of English as an Additional/Second Language*** If you are an English language learner, please be aware of several resources on campus that will support you with your language and writing development. These resources include: the Writing Center (<http://writingcenter.utah.edu/>); the Writing Program (<http://writing-program.utah.edu/>); the English Language Institute (<http://continue.utah.edu/eli/>). Please let me know if there is any additional support you would like to discuss for this class.
8. Based on CDC guidelines, the University requires everyone to wear face coverings in shared public spaces on campus, including our classroom. As a reminder, when I wear a face covering, I am protecting you. When you wear a face covering, you are protecting me and all of your classmates. If you forget your face covering, I will ask you to leave class to retrieve it. If you repeatedly fail to wear a face covering in class, I will refer you to the Dean of Students for a possible violation of the Student Code. Note that some students may qualify for accommodations through the Americans with Disabilities Act (ADA). If you think you meet these criteria and desire an exception to the face covering policy, contact the Center for Disability and Access <<https://t.e2ma.net/click/vlufyz/r2s6heu/biauqte>> (CDA). Accommodations should be obtained prior to the first day of class so that I am notified by CDA of any students who are not required to wear a face covering.

*This syllabus is meant to serve as an outline and guide for our course. Please note that I may modify it with reasonable notice to you. I may also modify the Course Schedule to accommodate the needs of our class. Any changes will be announced in class and updated in Canvas on the syllabus page.*

# CSBS EMERGENCY ACTION PLAN



## BUILDING EVACUATION

EAP (Emergency Assembly Point) – When you receive a notification to evacuate the building either by campus text alert system or by building fire alarm, please follow your instructor in an orderly fashion to the EAP marked on the map below. Once everyone is at the EAP, you will receive further instructions from Emergency Management personnel. You can also look up the EAP for any building you may be in on campus at <http://emergencymanagement.utah.edu/eap>.



## CAMPUS RESOURCES

**U Heads Up App:** There's an app for that. Download the app on your smartphone at [alert.utah.edu/headsup](http://alert.utah.edu/headsup) to access the following resources:

- **Emergency Response Guide:** Provides instructions on how to handle any type of emergency, such as earthquake, utility failure, fire, active shooter, etc. Flip charts with this information are also available around campus.
- **See Something, Say Something:** Report unsafe or hazardous conditions on campus. If you see a life threatening or emergency situation, please call 911!

**Safety Escorts:** For students who are on campus at night or past business hours and would like an escort to your car, please call 801-585-2677. You can call 24/7 and a security officer will be sent to walk with you or give you a ride to your desired on-campus location.