UCONN
UNIVERSITY OF CONNECTICUT

MATH 1070Q
Mathematics for Business and Economics

Syllabus - Summer Session 1, 2024

Excluding materials for purchase, syllabus information may be subject to change. The most up-to-date syllabus is located within the course in HuskyCT.

Course and Instructor Information

Course Title: Mathematics for Business and Economics
Credits: 3
Format: ONLINE (WW)
Prerequisites: Recommended Preparation: Math 1010 or the equivalent
Professor: Luan Doan

Email: luan.doan@uconn.edu
Office Hours/Availability: I intend to conduct office hours on Tuesday in person and Friday via WebEx.
The time for office hours is at followed:

1. Thursday, in-person, at MONT 404, from 2 pm to 4 pm.
2. Tuesday, via WebEx, link https://uconn-cmr.webex.com/meet/mld23003 from 2 pm to 4 pm (starting from second week).

TA: Chinmay Dharmendra, chinmaymd@uconn.edu
He intends to have office hours via WebEx at https://uconn-cmr.webex.com/meet/cmd21006 at these hours:

1. Monday, WebEx, 10:30 am to 12 pm (starting from the second week).
2. Friday, WebEx, 12 pm to 1:30 pm

Course Materials

Required course materials should be obtained within the first week of class. Students will be given a free trial period at the start of the session for the online homework.

Required textbooks are available for purchase through the UConn Bookstore (or use the Purchase Textbooks tool in HuskyCT). Textbooks can be shipped (fees apply). You may also get access directly from Cengage through the WebAssign link.

Required Materials:

- A*pplied Finite Mathematics* by Edmond C. Tomastik and Janice L. Epstein (bundled with WebAssign Code)

You can also buy the Access code with e-book directly from Cengage.

Course Objectives

By the end of the semester, students should be able to:

1. Understand the basics of sets and know how to find the size of sets.
2. Know how to solve various probability problems including understanding conditional probability and Bayes' Theorem.
3. Understand how permutations and combinations work and how they are related to probability.
4. Know how to calculate values for Bernoulli Trials.
5. Understand what random variables are and how to calculate measures of central tendency and spread. Understand the normal distribution.
6. Work with simple and compound interest problems and annuities and amortization.
7. Work with and create simple mathematical models.
8. Know how to solve systems of linear equations, including using linear programming.
9. Work with matrices, carry out matrix multiplication and Gaussian Elimination.
10. Use matrices to solve systems of equations.

Course Outline (and Calendar)

Chapter 4: Sets and Probability (Chapter 4)
Chapter 5: Counting and Probability (Chapter 5)

Chapter 6: Probability Distributions and Statistics (Chapter 6)
Chapter F: Finance (Chapter F)
Chapter 1: Systems of Linear Equations and Models
Chapter 2: Matrices
Chapter 3: Linear Programming: the Graphical Method

Daily Schedule

Note: the instructor reserves the right to change the schedule if he sees fit.

- There are 28 units that need to be learned in 28 days (from May 28 to June 28, minus 4 exam days), **MATH1070 is an intense course.**
- It is the student's duty to follow the course material and understand all the topics listed, either using the suggested daily schedule below, or following their own study plan, as long as all the homework assignments are turned in before or by the deadline posted in the last column of the table.
- Please pay attention to the collective exam days (in **red**): **No request for makeup exam will be considered if the student fails to communicate with the instructor before the deadline (5 pm of the exam day)**.

Week	Date	Suggested topic you should learn	Homework assignments due
# 1 May 28 - June 02	05 / 28	4.1. Introduction to Sets	
	05 / 29	4.2. The Number of Elements in a Set	
	05 / 30	4.3. Sample Spaces and Events	**4.1, 4.2, 4.3 (WebAssign)**
	05 / 31	4.4. Introduction to Probability	
	06 / 01	4.5. Rules for Probability	
	06 / 02	4.6. Conditional Probability	
# 2 June 03 - June 09	06 / 03	4.7. Bayes' Theorem	**4.4, 4.5, 4.6, 4.7 (WebAssign)**
	06 / 04	5.1. Multiplication Principle and Permutations	
	06 / 05	5.2. Combinations	
	06 / 06	5.3. Probability and Counting	**5.1, 5.2, 5.3 (WebAssign)**
	06 / 07	5.4. Bernoulli Trials	
	06 / 08	6.1. Random Variables	
	06 / 09	6.2. Measures of Central Tendency	
# 3 June 10 - June 16	06 / 10	6.3. Measures of Spread	**5.4, 6.1, 6.2 (WebAssign)**
	06 / 11	6.4. Normal Distributions	**Practice Midterm 1 (HuskyCT)**
Midterm Exam 1 (online): Chapters 4 and 5 on Wednesday, June 12 (open at 9 am, closed at 5 pm)			
	06 / 13	F.1. Simple Interest and Discount	**6.3, 6.4, F.1 (WebAssign)**
	06 / 14	F.2. Compound Interest	
	06 / 15	F.3. Annuities	
	06 / 16	F.4. Present Value of Annuities and Amortization	
# 4 June 17 - June 23	06 / 17	1.1. Mathematical Models	**F.2, F.3, F.4, 1.1 (WebAssign)**
	06 / 18	1.2. Systems of Linear Equations	**Practice Midterm 2 (HuskyCT)**
Midterm Exam 2 (online): Chapters 6 and F on Wednesday, June 19 (open at 9 am, closed at 5 pm)			
	06 / 20	1.3. Gaussian Elimination	
	06 / 21	1.4. Systems of Equations with Non-Unique Solutions	**1.2, 1.3, 1.4 (WebAssign)**
	06 / 22	2.1. Introduction to Matrices	
	06 / 23	2.2. Matrix Multiplication	
# 5 June 24 - June 28	06 / 24	3.1. Linear Programming	**2.1, 2.2, 3.1 (WebAssign)** **Practice Midterm 3 (HuskyCT)**
Midterm Exam 3 (online): Chapters 1 and 2 on Tuesday, June 25 (open at 9 am, closed at 5 pm)			
	06 / 26	3.2. Graphing Linear Inequalities	
	06 / 27	3.3. Solving Linear Programming Problems **Hard deadline for all assignments (including -20%**	**3.2, 3.3** **Practice Final (HuskyCT)**

		penalty)	
Final Exam: Cumulative on Friday, June 28 (open at 9 am, closed at 5 pm)			

Homework

1. Our textbook is **Applied Finite Mathematics** by *Edmond C. Tomastik* and *Janice L. Epstein,* Cengage, which can be accessed from WebAssign.
   We will be using WebAssign for homework. You can find the link to WebAssign in the left panel of the course HuskyCT page**.** You can find more information here.
   Everyone has access to the WebAssign homework for the first 2 weeks of the semester, so you can start immediately while you arrange for access. After the initial 14-day grace period, you will need have a WebAssign access code. If you subscribe to the bookstore bundle, WebAssign access should be included **WebAssign access is separate from Cengage Unlimited.** You can get WebAssign access from the WebAssign code that comes with the textbook bundle from the bookstore, by buying a standalone access code, or by subscribing to Cengage Unlimited. Cengage Unlimited is an additional subscription that gives you access to unlimited courses, more textbooks, and extra study tools. If you know you'll be taking multiple classes that use WebAssign then Cengage Unlimited may be a good deal for you, but it is not necessary for our course. Please read the information here to decide which version is best for you.
2. WebAssign homework are **due 11:59 pm every Monday and Thursday** (see the daily schedule for the detailed deadlines).
   WebAssign homework is a great resource to prepare for the midterms and final, so you should really try your best to finish it by yourself.
   We strongly recommend that you do not leave your homework to the last minute.
   WebAssign homework that is **submitted at least 24 hours before the due date will earn extra credit** (an extra 25% of the question value).
3. Unless otherwise stated, WebAssign is set to require **6 decimal places of precision**.
   Each question part also allows **5 attempts** to submit your answer until it is correct**.**
   We strongly recommend that you do not round and **use fractional values whenever possible, or at least make sure to submit 6+ decimal places**.
4. Please read "Late Work policy" for more details. Here is the summary about homework submission:
   - Homework submitted 24 hours earlier than deadline will receive an extra credit of 25% of that homework. In total you can earn up to 5 points of extra credits of the cumulative grade.
   - Extension request / late submission will be penalized by 20%, regardless of valid reason.
   - Three lowest homework scores will be dropped from the final grade calculation.
   - Hard deadline for all assignments is June 27, after which, no more extension will be granted.

2. Here are some links that may be useful:
   How to Register for WebAssign in Blackboard
   WebAssign Quick Guide
   Cengage representatives also created a webpage on their side for MATH 1070 students, if you need to contact them.
   https://www.cengage.com/coursepages/UConn_MATH1070

Exams

- There will be 3 midterm exams held during the semester, plus a cumulative final exam.
  Each exam can be accessed in the "Exam" tab on HuskyCT, and will be visible on the date of the exam from **9 am to 5 pm**.
  One you start the exam, you have **two hours** to finish.
  The scheduled dates of the three exams are as follows:
  1. Midterm Exam 1, Wednesday June 12, Content: Chapters 4 and 5.
  2. Midterm Exam 2, Wednesday June 19, Content: Chapters 6 and F.
  3. Midterm Exam 3, Tuesday, June 25, Content: Chapters 1 and 2.
  4. Final Exam, Friday June 28, Cumulative
- Exams will be held **online** on HuskyCT and will be **open book and open notes**.You may use a **calculator**.
  Exam questions will appear one at a time in random order, and you must answer each question before moving on to the next – backtracking is not allowed.
- A **practice test** will be posted to HuskyCT before each exam, found in the folder "Exam/ Practice Exam" on HuskyCT.
  Please use the practice test to review the material and the exam format.
  You may retake the practice test as many times as you'd like, until 11:59 pm the night before the actual exam.
  Each practice midterm test is worth up to 1 point of extra credit in your cumulative average, and the practice

final is worth up to 2 points of extra credits.
(They are graded based on accuracy, so you are strongly encouraged to redo the practice test many times until you get the best score).

- Exam scores will be released on HuskyCT after the exam window ends.

- Since the course is quite intense, **request for makeup exam in general will not be granted**.
  Please check the "Late Work policy" below for details.
- It is the student's duty to work on a stable computer and maintain a good internet connection throughout the test.
  These two conditions are bare minimum requirements for an online course.
  (HuskyCT has issues with tablets and iPad, so students should not use these devices when doing the tests).
  Request for makeup exam because of technical issues arisen from computer damage or bad internet connection in general will not be considered.

Late Work Policy

- Homework assignments are due every Tuesday and Thursday (please see the Course Schedule for the detailed deadline).
  The first homework deadline is Thursday, May 30.
- **Homework extensions can be requested via WebAssign directly.**
  However, regardless of whether students have a valid reason or not, any extension of homework is subjected to 20% penalty.
  Therefore, it is important to stay ahead of deadline.
- Also, to mitigate "accidentally" missed homework, **three lowest homework scores will be dropped** in the final grade calculation, besides the fact that each homework turned in at least 24 hours before the deadline receives an additional 25% extra credits (cumulatively, up to 5 points of the grade of the course)
- **The hard deadline of all homework is June 27, 11:59 pm, after which no more extension will be given.**
  Any unsubmitted homework after that will receive a zero.
- There will be **no makeup exams, unless communicated with the professor before it is due**, so it is the student's responsibility to communicate with and seek approval from the professor.
- **Any petition for makeup exam after it is due will not be considered.**

Course Requirements and Grading

Summary of Course Grading:

Course Components	Weight
Online Homework	20%
Midterms	60% (20% each)
Final Exam	20%

Grading Scale
Note: The instructor has the full authority to adjust the cutoff. However, the cutoff will only be reduced, not increased. (For example, it can never be the case that your cumulative grade is 94 and still receive an A-).

Grade	Letter Grade	GPA
93-100	A	4.0
90-92.99	A-	3.7
87-89.99	B+	3.3
83-86.99	B	3.0
80-82.99	B-	2.7
77-79.99	C+	2.3
73-76.99	C	2.0
70-72.99	C-	1.7
67-69.99	D+	1.3
63-66.99	D	1.0
60-62.99	D-	0.7
<60	F	0.0

Extra Credits

- Student can earn up to 20 x 25% = 5 points of extra credit for early online homework submission. (See the sections "Homework" and "Late work policy")
- Each practice midterm test gives you 1 point extra credit. The practice final exam gives you 2 points extra credits.
- Together, you can earn up to 110 points of the cumulative grade, but your grade will be calculated on the total of 100 using the table above.

Student Responsibilities and Resources

As a member of the University of Connecticut student community, you are held to certain standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. Review these important standards, policies and resources, which include:

- The Student Code
  - Academic Integrity
  - Resources on Avoiding Cheating and Plagiarism
- Copyrighted Materials
- Credit Hours and Workload
- Netiquette and Communication
- Adding or Dropping a Course
- Academic Calendar
- Policy Against Discrimination, Harassment and Inappropriate Romantic Relationships
- Sexual Assault Reporting Policy

Students with Disabilities

The University of Connecticut is committed to protecting the rights of individuals with disabilities and assuring that the learning environment is accessible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, please let me know immediately so that we can discuss options. Students who require accommodations should contact the Center for Students with Disabilities, Wilbur Cross Building Room 204, (860) 486-2020 or http://csd.uconn.edu/.

Blackboard measures and evaluates accessibility using two sets of standards: the WCAG 2.0 standards issued by the World Wide Web Consortium (W3C) and Section 508 of the Rehabilitation Act issued in the United States federal government." (Retrieved March 24, 2013 from Blackboard's website)

Software/Technical Requirements (with Accessibility and Privacy Information)

The software/technical requirements for this course include:

- HuskyCT/Blackboard (HuskyCT/ Blackboard Accessibility Statement, HuskyCT/ Blackboard Privacy Policy)
- Adobe Acrobat Reader (Adobe Reader Accessibility Statement, Adobe Reader Privacy Policy)
- Google Apps (Google Apps Accessibility, Google for Education Privacy Policy)
- Microsoft Office (free to UConn students through uconn.onthehub.com) (Microsoft Accessibility Statement, Microsoft Privacy Statement)
- Dedicated access to high-speed internet with a minimum speed of 1.5 Mbps (4 Mbps or higher is recommended).
- WebCam
- Ability to scan handwritten work in as a PDF (apps like CamScanner are acceptable)

For information on managing your privacy at the University of Connecticut, visit the University's Privacy page.

NOTE: This course has NOT been designed for use with mobile devices.

Help

Technical and Academic Help provides a guide to technical and academic assistance.

This course is completely facilitated online using the learning management platform, HuskyCT. If you have difficulty accessing HuskyCT, you have access to the in person/live person support options available during regular business hours through the Help Center. You also have 24x7 Course Support including access to live chat, phone, and support documents.

Minimum Technical Skills

To be successful in this course, you will need the following technical skills:

- Use electronic mail with attachments.
- Save files in commonly used word processing program formats.
- Copy and paste text, graphics or hyperlinks.
- Work within two or more browser windows simultaneously.
- Open and access PDF files.
- Create PDF files of handwritten work.

University students are expected to demonstrate competency in Computer Technology. Explore the Computer Technology Competencies page for more information..

Evaluation of the Course

Students will be provided an opportunity to evaluate instruction in this course using the University's standard procedures, which are administered by the Office of Institutional Research and Effectiveness (OIRE).

Additional informal formative surveys may also be administered within the course as an optional evaluation tool.