

STOR 113.02 – Summer 2023

Decision Models for Business and Economics

Course Description

The use of quantitative modeling has long been recognized by business analysts and economists as an effective tool in the analysis of complex problems and decision making. This course presents basic quantitative models at an introductory level, focusing on linear and non-linear functions of single and multiple variables, and optimization with or without constraints. The course will also expose students to a wide range of applications arising in the context of business and economics.

Basic Information

Instructor	Andrew Ackerman (Andy) Email: atacker@email.unc.edu Office Hours: W 1:00 pm – 3 pm, F 1:00 pm – 4pm (Hanes B-07)	
Instructional Assistants	Fuwei Yu Email: fwy@unc.edu Office Hours: M,Th 1:30-2:30 pm Zoom Link	Prabhanka Deka Email: deka@live.unc.edu Office Hours: W 2:30-4:30 pm Zoom Link
Contacting us	When emailing me, please simply call me Andy, and include “113-02” in the subject line. You may include screenshots or photos of your scratch work.	
Course Mode	In-Person unless otherwise advised. In the case of a transition to purely virtual instruction, lectures will continue synchronously via zoom and exam policies will be made explicit.	
Sakai link	https://sakai.unc.edu/portal/site/b9c3666d-bfba-4a78-8979-7fa7910c28e1/page/da56eed8-fef5-49b1-bd6b-e45b65c8baf6	
Tutorial Sessions	M-Th 7-8 pm	
Lecture	M-F 11:30 am -1:00 pm Hanes 107	
Course materials	The textbook is Finite Mathematics and Applied Calculus, 7th edition, by Waner and Costenoble (2018). Homework will be online using Webassign . Webassign access code costs \$34 . You can buy the access key using the UNC Bookstore website or buy access at www.webassign.net . You will need to make an account at www.webassign.net , and enter the Class Key unc 8594 4988 to access our section. If you have financial aid, please contact the UNC Bookstore to get access at reduced cost.	
Credit hours	3	
Prerequisites	Math 110 (Algebra) or equivalent	
Office hours	Office hours are your time to ask me anything you want. My sole stipulation is that you should have attempted a homework problem before you ask me about it. My hope is that holding an office hour on five different days will accommodate the diversity of schedules inherent to such a class. That said, if you find yourself unable to attend office hours, feel free to email me and set up an appointment.	
Tutorial sessions	Monday through Thursday nights, a tutorial will be offered remotely on Zoom from 7 – 8 pm . The tutorial session is basically a shared office hour for all sections of STOR 113 run by an IA	

Final Grade Computation

Assessments	Date	Percent
Homework	3/Week	20%
Midterm 1	26-May	25%
Midterm 2	7-June	25%
Final Exam		30%

A	93 or above
A-	90 to 92.99
B+	87 to 89.99
B	83 to 86.99
B-	80 to 82.99

C+	77 to 79.99
C	73 to 76.99
C-	70 to 72.99
D+	67 to 69.99
D	60 to 66.99
F	Below 60

Course Assessments

Homework	<p>All sections of STOR 113 will be using Webassign for homework. See Course materials above for instructions on Webassign.</p> <p>Working with other students on homework is encouraged.</p> <p>Homework will be assigned roughly three times per week. This will result in about 15-20 homework assignments. Every homework has equal weight.</p> <p>Late assignments will not be accepted and will receive a grade of 0, and no extensions will be granted except for University Excused Absences (this includes positive Covid test results). This is to ensure that you stay up to date on your assignments. However, your lowest homework score will be dropped to accommodate extenuating circumstances or anomalously poor scores.</p> <p>Extra attempts on Webassign questions will not be granted.</p> <p>Any dispute regarding the grading of a homework assignment should be brought to either IA or myself no more than 1 week after the deadline of an assignment. Questions on individual problems can be asked via WebAssign's messaging capabilities.</p>
Exams	<p>There will be two midterms and a final exam. These are required and no make-up exams will be granted unless your absence is approved by the university. Your final exam score will replace your lowest midterm if it improves your final average.</p> <p>Missed exams will be made up by adding weight to the final. Exams will be done during the scheduled class time. If you work with any classmate or another student at UNC on your exam, you will receive a 0% and be reported to the university. You cannot have three finals within a 24-hour period, and therefore you will need to be excused from the regularly scheduled final exam. In this scenario, you must obtain a dean's excuse and discuss the situation with me at least two weeks before the regularly scheduled final exam so that an alternative arrangement can be made.</p>

Course Policies

Teaching Philosophy	<p>My general approach aims to make two principles abundantly clear: there are no (sincere) bad questions, and education is only one facet of your life.</p> <p>To the first point, if you ask me a question out of genuine curiosity or confusion, I guarantee to respect and attend to it regardless of the level of complexity. Note, I do not claim to always have the answer, and certain questions may require an outside (office hours) conversation. But my guarantee is to provide an answer when I am able and search with you when unable. The flip side of this guarantee is your willingness to keep me accountable. Ask questions. If you are confused, please reach out for help. If in-class questions are too daunting, take advantage of office hours, tutorial sessions, or electronic communication.</p> <p>As to the second point, while I am ultimately a very ardent advocate of the merits of education, I want to reiterate that no single facet of your life – perhaps least of which performance in STOR 113.02 – fully defines you as a person. This is not to say that this, or any class, is unimportant, rather that this class is meant to enable and instruct not to define.</p>
Honor Code	<p>It is my aim to make my expectations for acceptable and original work as clear and explicit as possible. Gray areas frustrated me as a student, so I aim to prevent them as an instructor.</p> <p>To that end, students are bound by UNC's honor code in taking exams and in written work, and the submission of said work signifies understanding and acceptance of those requirements.</p> <p>More specific to this course, collaboration is not only permitted but <i>encouraged</i> on homework and homework alone. Exams, by contrast, will be completed individually. I recognize that exams can be immensely stressful, and I do not intend to add to that burden. That said, my job is to cultivate and assess your <i>personal</i> understanding. Insofar as individual exams serve this purpose, they will be preferred.</p> <p>Please consult with me if you have any questions about the honor code. Asking for clarification in advance is far preferred to asking for forgiveness post-facto.</p>
Attendance Policy	<p>Lecture attendance is not required. That said, class participation is fundamental to success in this class. While lectures will be recorded, I make no guarantee that their resolution will be as pristine as sitting in the class itself. Moreover, these recordings are exactly that – recordings. Therefore, individuals simply watching lectures post-facto will not have the opportunity to ask questions in real time.</p>
Lecture Recordings	<p>Lectures are not recorded at this time.</p>
Mask Requirements	<p>In accordance with the UNC mask policy, masks are optional for all students and instructors.</p>
Technology Use	<p>You are welcome to bring a calculator to class. We will also use Excel on your laptops frequently.</p> <p>Technology can support student learning, but it can also become a distraction. You should not use laptops or other devices for entertainment during class and should not display any material on the laptop which may be distracting or offensive to your fellow students. Laptops should only be used for legitimate classroom purposes, such as coding, taking notes, or downloading class information from Sakai. E-mail, messaging, surfing the Internet, reading the news, or playing games are not</p>

	considered legitimate classroom purposes. Such inappropriate laptop use is distracting to those seated around you and is unprofessional.
Syllabus changes	I reserve the right to make changes to the syllabus, including test dates and grade computation. These changes will be announced as early as possible so that students can adjust their schedules.

University Resources for Students

Learning Center	The UNC Learning Center is a great resource both for students who are struggling in their courses and for those who want to be proactive and develop sound study practices to prevent falling behind. They offer individual consultations, peer tutoring, academic coaching, test prep programming, study skills workshops, and peer study groups.
Tutorial	Every Monday through Thursday evening, a tutorial will be offered remotely on Zoom from 7:00PM - 8:00 PM. You can access these meetings using the link above. These sessions are run by experienced Instructional Assistants who enjoy tutoring in statistics. Take advantage of their services!
Accessibility Resources	UNC-Chapel Hill facilitates the implementation of reasonable accommodations for students with learning disabilities, physical disabilities, mental health struggles, chronic medical conditions, temporary disability, or pregnancy complications, all of which can impair student success. See the ARS website for contact and registration information: https://ars.unc.edu/about-ars/contact-us
Counseling and Psychological Services	CAPS is strongly committed to addressing the mental health needs of a diverse student body through timely access to consultation and connection to clinically appropriate services, whether for short or long-term needs. Go to their website: https://caps.unc.edu/ or visit their facilities on the third floor of the Campus Health Services building for a walk-in evaluation to learn more.
Title IX	Any student who is impacted by discrimination, harassment, interpersonal (relationship) violence, sexual violence, sexual exploitation, or stalking is encouraged to seek resources on campus or in the community. Please contact the Director of Title IX Compliance (Adrienne Allison - Adrienne.allison@unc.edu), Report and Response Coordinators in the Equal Opportunity and Compliance Office (reportandresponse@unc.edu), Counseling and Psychological Services (confidential), or the Gender Violence Services Coordinators (gvsc@unc.edu ; confidential) to discuss your specific needs. Additional resources are available at safe.unc.edu .
Ombuds Office	The Ombuds Office (https://ombuds.unc.edu/) is an impartial, confidential, and independent office within UNC that offers a safe space to any UNC members to discuss sensitive issues (for example, issues relating to power dynamic). They do not take sides and maintain complete confidentiality. All conversations with the Ombuds Office are “off the record.”

Andy's Teaching Mentors	As a graduate Teaching Fellow, I am mentored by STOR professors Dr. Mario Giacomazzo (mgiacoma@email.unc.edu) and Dr. Jeff McLean (mclean@unc.edu). If you have an issue with the class that you feel uncomfortable raising with me, you may raise it with them confidentially.
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Rough Course Outline (updated 5/4/23)

Class	Day	Date	Topics	Exam Material
1	W	17-May	Review of Linear Functions	
2	Th	18-May	Revenue/Supply and Demand	
3	F	19-May	Equations of Two Variables	
4	M	22-May	Quadratic Functions	
4	T	23-May	Exponential Functions	
5	W	24-May	Applications of the Exponential	
6	Th	25-May	Logarithmic Functions	
7	F	26-May	Midterm 1	Linear and Nonlinear Functions
	M	29-May	Memorial Day	
8	T	30-May	Introduction to Derivatives	
9	W	31-May	Introduction to Derivatives	
10	Th	1-June	Power Rule/Product and Quotient Rule	
11	F	2-June	Product and Quotient Rule	
12	M	5-June	Derivative of the Exponential/Chain Rule	
13	T	6-June	Chain Rule	
14	W	7-June	Midterm 2	Derivatives
15	Th	8-June	Marginal Analysis	
16	F	9-June	Optimization	
17	M	12-June	Optimization/Elasticity	
18	T	13-June	Second Derivative	
19	W	14-June	Multivariate Functions/Partials	
20	Th	15-June	Partials	
21	F	16-June	Review for Final	
	M	19-June	Holiday – No class	
22	T	20-June	Review for Final	

