MTH 122 - Survey of Calculus and Its Applications II
Course Syllabus

Course information

Course number: MTH 122
Course name: Survey of Calculus and Its Applications II
Course credits: 4
Catalog description: Continuation of MTH 121. Maximization of functions of several variables using both calculus and elementary linear programming techniques. Elementary integration, simple differential equations, matrix algebra. *Section number:* 14420
Section format: Lecture
Class times: MWF 4:10 - 5:00 PM
Class location: Discord and Twitch
Textbook: Goldstein, Schneider, Lay, and Asmar, "Calculus and Its Applications 5th custom UB edition"

Instructor information

Instructor: Richard Hollister Ph.D. (He, Him, His)
Email: `rahollis@buffalo.edu`
Office location: 326 Mathematics Building
Office hours: F 2:00 - 4:00 PM on Discord
About me: I recently graduated with my PhD in Mathematics from Western Michigan University. My research interests include Linear Algebra, Matrix Theory, and Numerical Analysis. This is my first semester as a visiting Assistant Professor here at UB, and I am teaching MTH 122 and MTH 337. Outside of academics, I enjoy teaching snowboarding at all skill levels and coaching track and field.

Lecture information

Streaming on Twitch

Lectures will be streamed on Twitch, `http://twitch.tv`. Search for "profrhollister" to find the stream. Lectures will also be recorded and posted on UBLearns within 24 hours of the stream.

Discussion on Discord

We will also be using Discord to enable class discussions. The Discord app can be downloaded at `http://discord.gg`. Please do not share the server link with anyone outside of the class. In order to access the discussion rooms on the Discord server, you will need to be given permission. This will be done the **first day of class only** or during office hours.

All office hours will also take place in Discord.

Grades

Grades will be distributed as follows:

HW Quizzes	Participation	Ch. 7 Exam	Ch. 9 Exam	Ch. 10 Exam	Final Exam
20%	10%	15%	15%	15%	25%

Homework quizzes

A list of homework problems can be found on UBLearns. Homework problems will not be collected or graded, but there will be weekly quizzes based on the homework. Weekly quizzes will be given during recitation with questions pulled from the previous week's homework problems.

Homework quizzes will be proctored in Zoom during your recitation section, and will be submitted via Gradescope `http://www.gradescope.com`. There are two entry codes for Gradescope

TA	entry code
Hong Chang	**9Z278K**
Subhankar Dey	**MPD7ED**

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You are encouraged to work through as many problems from each section as it takes for you to become comfortable with the material. You are also encouraged to work together on the homework problems, but keep in mind homework quizzes must be completed on your own. Any student found to be cheating will receive a zero for the quiz.

The lowest two quiz grades will be dropped at the end of the semester.

Participation

Recitation attendance will be recorded each week and will be used as the participation grade. You are allowed two absences for the semester.

Chapter exams

There will be three exams during the semester. Each of these exams will cover one chapter of material from the course. Exam dates can be found on UBLearns in the tentative calendar. Each chapter exam will consist of about 7 questions relating to material covered in lecture from the corresponding chapter.

Exams will be proctored using Respondus Lockdown Browser, and submitted using Gradescope.

Final exam

All sections of MTH 122 take a common final exam. This common final exam will be 11:45 AM - 2:45 PM on Tuesday December 15. You will have 2 hours to complete the exam, and it will be proctored using Respondus Lockdown Browser and Zoom and submitted using Gradescope. You will need two devices to take the exam: a computer that can use Lockdown Browser (iPads and Chromebooks will not work), and a second device with camera and microphone to use Zoom.

Later in the semester, you will be automatically enrolled in a UBLearns course specifically for the final exam, and you will receive an email with more information about the final exam.

Recitation information

18659

Instructor: Hong Chang, email hchang24@buffalo.edu
Meeting time: M 5:20 - 6:10 PM
Meeting location: Zoom link https://buffalo.zoom.us/j/92391050837
Office hours: TR 12:00 - 1:00 PM (in class Discord server)

19250

Instructor: Subhankar Dey, email subhanka@buffalo.edu
Meeting time: W 5:20 - 6:10 PM
Meeting location: Zoom
https://buffalo.zoom.us/j/93446540254?pwd=TDdvUHF1YlhORjhYOU5mMDJiUFUwZz09
Office hours: W 6.30 - 7.30 PM; Zoom
https://buffalo.zoom.us/j/94899075445?pwd=ckRQRmVMQmNPOFdIa0tiN2g5QWVaQT09
F 6.00-7.00 PM; Zoom
https://buffalo.zoom.us/j/93886217170?pwd=WG53RFNBRVlqczFVMXIxdkx1a00rUT09

Additional information

Important dates

- Aug. 31: first day of class
- Sep. 7: class will be held on Labor Day
- Sep. 8: last day to drop/add
- Nov. 13: last day to resign
- Dec. 11: last day of classes

Academic integrity

Academic integrity is critical to the learning process. It is your responsibility as a student to complete your work in an honest fashion, upholding the expectations your individual instructors have for you in this regard. The ultimate goal is to ensure that you learn the content in your courses in accordance with UB's academic integrity principles, regardless of whether instruction is in-person or remote. Thank you for upholding your own personal integrity and ensuring UB's tradition of academic excellence. The academic integrity policy is available at https://www.buffalo.edu/academic-integrity.html.

Collaboration is encouraged on homework assignments, but **each student must write up the solutions to each problem on their own**. This means you can discuss the homework problems with each other, but you must solve the problems yourself. Exams must be completed on your own with no help from notes, books, friends, technology (calculator or computer), or the internet. Any student found to be in violation of academic integrity will receive a zero on the assignment or exam in question.

Accessibility resources

If you have any disability which requires reasonable accommodations to enable you to participate in this course, please contact the Office of Accessibility Resources in 60 Capen Hall, 716-645-2608 and also the instructor of this course during the first week of class. The office will provide you with information and review appropriate arrangements for reasonable accommodations, which can be found on the web at: `http://www.buffalo.edu/studentlife/who-we-are/departments/accessibility.html`.

Sexual violence

UB is committed to providing a safe learning environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic and dating violence and stalking. If you have experienced gender-based violence (intimate partner violence, attempted or completed sexual assault, harassment, coercion, stalking, etc.), UB has resources to help. This includes academic accommodations, health and counseling services, housing accommodations, helping with legal protective orders, and assistance with reporting the incident to police or other UB officials if you so choose. Please contact UB's Title IX Coordinator at 716-645-2266 for more information. For confidential assistance, you may also contact a Crisis Services Campus Advocate at 716-796-4399.

Mental health

As a student you may experience a range of issues that can cause barriers to learning or reduce your ability to participate in daily activities. These might include strained relationships, anxiety, high levels of stress, alcohol/drug problems, feeling down, health concerns, or unwanted sexual experiences. Counseling, Health Services, and Health Promotion are here to help with these or other issues you may experience. You can learn more about these programs and services by contacting:
Counseling Services:

- 120 Richmond Quad (North Campus), 716-645-2720
- 202 Michael Hall (South Campus), 716-829-5800

Health Services:

- Michael Hall (South Campus), 716-829-3316

Health Promotion:

- 114 Student Union (North Campus), 716-645-2837

UB portfolio

If you are completing this course as part of your UB Curriculum requirements, please select an 'artifact' from this course that is representative of your learning and save it in a safe location with a clear title. Your final UB Curriculum requirement, UBC 399: UB Curriculum Capstone, will require you to submit these 'artifacts' as you process and reflect on your achievement and growth through the UB Curriculum. Artifacts include homework assignments, exams, research papers, projects, lab reports, presentations, and other coursework. For more information, see the UB Curriculum Capstone website: `https://www.buffalo.edu/ubcurriculum/capstone.html`.

Tentative weekly calendar

Week	Sections	Topics
1	7.1 - 7.2	Functions of several variables. Partial derivatives.
2	7.3 - 7.4	Maxima and minima of functions of several variables. Lagrange multipliers and constrained optimization.
3	7.5 - 7.6	The method of least squares. Double integrals.
4		**Review and Exam 1.**
5	9.1 - 9.2	Integration by substitution and integration by parts.
6	9.3 - 9.4	Evaluation of definite integrals. Approximation of definite integrals.
7	9.5 - 9.6	Some applications of the integral. Improper integrals.
8		**Review and Exam 2.**
9	10.1 - 10.2, 10.5	Solutions of differential equations. Separation of variables. Graphing solutions of differential equations.
10	10.6 - 10.7	Applications of differential equations. Numerical solutions of differential equations.
11		**Review and Exam 3.**
12	12.1 - 12.2	Discrete random variables. Continuous random variables.
13	12.3 - 12.4	Expected value and variance. Exponential and normal random variables.