Honors Calculus I - Math 1181H (Autumn 2023)

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1 Course overview

Office Hours: Mondays 2:00-3:00pm (MW 636).
Thursdays 10:20-11:15am (EC 254)

Text: G.F. Simmons: *Calculus with Analytic Geometry*, 2nd edition, McGraw-Hill, ISBN: 9780070576424.

Course Description: This course gives an in depth introduction to the concepts and results of differential and integral calculus, as well as infinite series. Focus will be given on understanding why statements are true (i.e. to their proofs) rather than solely on computations.
Calculus is a very old branch of mathematics, with ideas going back at least to Archimedes. We think of calculus being formalized as a subject by Newton (1642-1727) and Leibniz (1646-1716). Since then, it has become part of the basic language of science. Beginning in the 17th century, physical sciences such as Physics and Engineering, were expressed in terms of Calculus. But increasingly, Calculus is the fundamental language of sciences as divers as Biology and Economics. One of the strengths of Calculus, and Mathematics in general, is its ability to describe phenomena in a wide range of subjects by concentrating on their underlying structures, independent of the trapping of the specific field.

Course Topics: We will cover Chapters 2-10 and 12-14 of the textbook (see above).

Prerequisites: 1151 or 151.xx, and permission of department. GE quant reason math and logic course. Not open to students with credit for any higher numbered math class.

Websites: Important class information will be available on the class website and Carmen:
https://people.math.osu.edu/cueto.5/teaching/1181H/Au23 ; https://carmen.osu.edu

Lectures: Mon-Tue-Wed-Thu-Fri 9:10AM-10:05AM in Enarson classroom Bldg (EC) 226.

Grading: Your final raw score for this course will be computed using the following weights:

Final Exam (Monday Dec. 11, 10:00AM-11:45AM (to be confirmed))	35%
Midterm 1 (Tuesday, Sept. 19, in class)	15%
Midterm 2 (Tuesday, Oct. 24, in class)	15%
Midterm 3 (Tuesday, Nov. 21, in class)	15%
Homework	20%

Your course letter grade will then be determined based on

1. Your **accumulated points**.
2. My determination of the overall class performance level.

A reasonable points-to-letter-grade **estimate** is the following:

Letter grade	A	A-	B+	B	B-	C+	C	C-	D	E
Percentile range	100-93	93-90	90-87	87-83	83-80	80-77	77-73	73-70	70-67	67-60

If your degree program requires a certain letter grade in this course, it is a good idea to think about the likelihood of you ending up in each of the above ranges early in this semester. Please talk to me during the first weeks of class regarding this matter.

Class Participation and Attendance: Doing math is a human activity. We will cover the material in an interactive fashion each lecture. It is important to stay actively engaged with the material and connected with both instructors and classmates, e.g. by attending lectures and using Carmen's discussion board. Lectures will be approached as active learning sessions.

To accommodate special situations (e.g. isolation/quarantine due to COVID-19 exposure or positive test), lecture notes will be posted on the course's website. I expect students to attend the daily lectures. Frequent absences are likely to be noted and may factor into the grade in borderline cases.

Homework: Homework is an essential component of this course. Problems will be assigned from the course's textbook. **The goal of each homework set is to help you understand the material and to prepare you for the tests.** It is thus imperative that you start working on each assignment as soon as we view the material in class. Take time to understand the questions and think about how to solve each problem before seeking help from the instructor and your classmates. Forming study groups is strongly encouraged. Feel free to post questions on Carmen discussion board if you are stuck on a problem and cannot make it to Office Hours.

Assignments will be submitted in class. If you use an electronic devise to work on your homework, you must bring a printout to class.

There will a total of 12 homeworks (see the course schedule for due dates). Only three problems from each set will be graded. Each homework set will be worth 20 points (5 points per problem graded plus up to 5 extra points for completion of the assignement). Always justify your answers and calculations!

You are strongly encouraged to discuss the problems with me and your classmates, but your write ups must be your own. If you use other people's ideas, including from an online source, you must state this explicitly.

No late homework will be accepted. Your two lowest homework grades will be dropped.

Showing Your Work: Mathematics is not just about deriving the correct numerical solution to a problem. It is also about convincing others that your method of calculation is appropriate. ***Insufficiently supported answers may receive partial or no credit on exams.***

Calculators etc.: Calculators, cell phones and other electronic devices **will not be permitted**.

Missed Coursework: No late exams will be accepted without prior written permission. All requests for rescheduling (e.g. due to sickness, athlete duties or unforseen circumstances) must be made in writing at least 48 hours before the regularly scheduled time. Within 48 hours of an exam, only documented legitimate family or medical emergencies will be considered as excuses.
Do not attend class if you are feeling sick, especially if you experience flu-like symptoms.

Course topics: We will cover Chapters 2-10 and 12-14 of the textbook (see above). This will include:

2 General policies

Religious accommodations Statement: It is Ohio States policy to reasonably accommodate the sincerely held religious beliefs and practices of all students. The policy permits a student to be absent for up to three days each academic semester for reasons of faith or religious or spiritual belief.

Students planning to use religious beliefs or practices accommodations for course requirements must inform the instructor in writing no later than 14 days after the course begins. The instructor is then responsible for scheduling an alternative time and date for the course requirement, which may be before or after the original time and date of the course requirement. These alternative accommodations will remain confidential. It is the students responsibility to ensure that all course assignments are completed.

Academic Misconduct Statement: It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term academic misconduct includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-48.7). For additional information, see the Code of Student Conduct at http://studentlife.osu.edu/csc/.

Statement on Title IX: Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at http://titleix.osu.edu or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at titleix@osu.edu

Disability Statement: The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; http://www.ods.osu.edu/; 098 Baker Hall, 113 W. 12th Ave.

Your mental health: As a student you may experience a range of issues that can cause barriers to learning such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a students ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via the Office of Student Lifes Counseling and Consultation Service (CCS) by visiting https://ccs.osu.edu or calling 614-292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at 614-292-5766. Emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273- TALK or at

https://suicidepreventionlifeline.org

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