

Syllabus for MATH 133 - 01, Calculus 1 with Fundamentals

College of the Holy Cross, Fall 2022

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Office hours: 1:30pm – 3pm on Mondays, Wednesdays and Thursdays, or by appointment.

Meeting times and location: MWRF 10:00 am - 10:50 am, Swords 359

Course Objectives: Students completing the course should be able to recognize and use the following concepts and methods of calculus when they occur in their disciplines: -

Differentiation: definition via limits, derivations rules, applications including optimization.
Basic functions (exp and log, trig and inverse trig) and their derivatives

Textbook: OpenStax (*Calculus Volume 1*).

Link to the book is here: <https://openstax.org/details/books/calculus-volume-1>

If you desire, you can get a hard copy of the text from Amazon for \$15-20. It is absolutely NOT required that you purchase a hard copy of the text.

Web materials: All class announcements, materials and grades will be posted on Canvas.

Quizzes:

There will be seven in-class quizzes during the semester. The lowest quiz grade will be dropped.

Here are the dates you will be taking a quiz:

Quiz 1 (September 14), Quiz 2 (September 21), Quiz 3 (September 28), Quiz 4 (October 26), Quiz 5 (November 2), Quiz 6 (November 9), Quiz 7 (December 2)

It is strongly advised that you do all of assigned homework since the quizzes will closely resemble the homework problems.

Homework:

Homework is due at the beginning of class. If you do not hand them in at the beginning of class, 10 points will be deducted. No homework grade will be dropped.

Here are the due dates of written homework:

Homework 1 (September 9), Homework 2 (September 16), Homework 3 (September 23),
Homework 4 (September 30), Homework 5 (October 21), Homework 6 (October 28), Homework 7 (November 4),
Homework 8 (November 11)

I will post the homework problem numbers assigned to each homework set on Canvas. It is strongly advised that you do all of assigned homework since the quizzes will closely resemble the homework problems. No help from any Internet sources is allowed. Plagiarism will not be tolerated and will be treated as a violation of the Departmental Policy on Academic Integrity.

By doing mathematics you learn mathematics. You learn math best when you approach the subject as something you enjoy. Learn to explain mathematics to your classmates. Mathematics can be fun and rewarding when there are people around you who enjoy figuring out problems as much as you do. Take advantage of this opportunity and organize study groups. I will not consider working on homework problems with your classmates as a violation of the academic honesty policy in the department. However, you must prepare and submit your own solutions.

Please follow these guidelines when you submit homework assignments:

- Put your name, the date, and the homework assignment number at the top of the first page.
- Staple multi-page assignments. No paperclips or folded corners.
- Write neatly and show all your work.
- On the last page of your assignment, please write the name(s) of your classmate(s) with whom you work on homework problems (with an asterisk).

Group Project: We will do group work every Friday starting from the second week. I will assign a topic to each group the week before fall break. Each group must write a report on the given topic and submit it on December 2 in class.

Mid-term exams:

There will be two mid-term exams during the semester. The mid-term exams are 90-minute exams; they will be held from 6pm to 7.30pm on Wednesdays, October 5 and November 16, in Smith Labs 154. We will typically review for each midterm during class on the same day. No mid-term exam grade will be dropped.

Final exam: There will be a mandatory cumulative final exam in this course. Location and time of the final exam are to be determined. **Check for final exam schedule conflicts as soon as possible.**

Snow days: If classes are cancelled due to snow, or for other official reasons, any scheduled quiz or exam will occur during next class meeting.

Grading: The course grade will be determined as follows:

Final exam: 20%

Mid-term exams: 30% (15% each)

Quizzes: 15 %

Homework: 15%

Group Project: 10%

Attendance and class participation: 5%

Attendance (TA weekly review session): 5%

An incomplete grade is given at the discretion of the instructor.

Final class grade: Final exam is mandatory. If you score at least a 60% on the final exam, both your class grades before the final and after the final will be considered. Whichever one higher will be your final class grade. If you do not take the final exam, then it will be a zero on the final exam. If you miss the final exam for a valid reason, you must still take a make-up final exam and score at least a 60% on the final to be eligible for the final class grade option explained above. If you miss the final exam for a valid reason and you do not take a make-up final exam, then it will be a zero on the final exam.

If your final exam grade is less than 60%, then you do not qualify for the final class grade option explained in the previous paragraph, and the final class grade will be computed according to the criterion described in **Grading**.

Calculators: Calculators are NOT permitted on quizzes, mid-term exams and the final exam.

Additional resources:

Kelly Zhou is the grader for this course. Kelly's office hours are to be determined. You may contact Kelly at kwzhou23@g.holycross.edu

There is a tutoring program through Academic Services and Learning Resources (ASLR). Calculus is one of the subjects for which students can obtain tutoring. You may discuss homework problems with tutors from ASLR, and I would not consider it as a violation of the academic honesty policy in the department. However, you must prepare and submit your own solutions.

For more information see: <https://www.holycross.edu/support-and-resources/academic-services-and-learning-resources>

Issues with the course/instructor: If you have issues with this course and/or instructor which you are not comfortable discussing with your instructor, you should contact the Chair of the Department of Mathematics and Computer Science, Professor Ed Soares, at esoares@holycross.edu.

Academic Honesty: Collaboration on quizzes, mid-term exams and final exam is NOT allowed.

A necessary prerequisite to the attainment of the goals of the College is maintaining complete honesty in all academic work. Students are expected to present their own work in exams and in any material submitted for credit. Students may not assist others in presenting work that is not their own. Offenders are subject to disciplinary action. A violation of the Department Policy on Academic Integrity will result in a 0 for that quiz or exam, and a letter describing the occurrence of academic dishonesty will be sent to the Chair of the Department of Mathematics and Computer Science and your Class Dean.

For more on Academic Integrity see: <https://www.holycross.edu/academics/programs/mathematics-and-computer-science/node/211581/academic-integrity>

COVID-19:

- Masks are optional during class time, quizzes, mid-term exams, final exam and office hours.
- If you have any symptoms of illness, please do not attend the class. If you test positive for COVID-19, please do not attend the class even if you do not have symptoms, and please let me know immediately. You may attend class and office hours via Zoom.
- If I test positive for COVID-19, I will teach and hold office hours via Zoom until I am allowed to be back on campus.
- If classes are switched to remote learning due to COVID-19, I will teach and hold office hours via Zoom until restrictions are lifted.
- If I switch to teaching and holding office hours via Zoom, I will post all the Zoom links and passwords on Canvas.

Diversity and Inclusion: It is my intent that students from all diverse backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit. Any suggestions you have pertaining to diversity and inclusion are encouraged and appreciated.

Section 2.1	16 - 23
Section 2.2	30 – 37, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55 - 80
Section 2.3 (odd)	83, 84, 85, 86, 87, 89, 91, 93, 95, 97, 98, 99, 100, 101, 103, 105, 107, 108, 109, 110, 111, 113 – 125
Section 2.4	131, 133, 135, 137, 139, 141, 143, 145, 147, 149, 150, 151, 153, 155, 157, 159, 161, 162, 163, 164, 165, 166, 167
Section 3.1	1 – 29 (odd), 35, 37, 39, 40, 41, 43, 44, 47
Section 3.2	55 – 83 (odd), 90 - 98
Section 3.3	106 – 117, 123, 125, 127, 129, 130, 131, 132, 137, 139, 140, 141, 142, 143, 144
Section 3.4	151 – 161 (odd), 164
Section 3.5	175 – 184, 191 – 213 (odd)
Section 3.6	215 – 239 (odd)
Section 3.7	261 – 293 (odd)
Section 3.8	301 – 309 (odd), 317, 319, 321, 328, 329, 330
Section 3.9	331 – 353 (odd)
Section 4.1	1, 3, 5, 7, 9, 10, 11, 12, 13, 14, 15, 16, 17 – 41 (odd)
Section 4.2	50 – 55, 69 – 85 (odd)
Section 4.3	91 – 95, 97, 98, 100 – 107, 109 – 133 (odd), 140, 141, 144, 145
Section 4.4	148 – 156, 161 – 169 (odd), 170, 171 – 181 (odd), 182, 190, 191, 192, 193
Section 4.5	194 – 200, 201 – 219 (odd), 220 – 245
Section 4.6	251, 252, 253, 254, 255, 257, 259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 295 – 305 (odd)
Section 4.7	315 – 322, 324, 325, 326, 329, 332 – 346
Section 4.8	356 – 395 (odd)

December 9, Friday, Last day of classes
December 13, Tuesday – December 17, Saturday, Final Exams
Final Exam is based on all sections covered in class.

The mind is not a vessel to be filled but a fire to be kindled.

— Plutarch