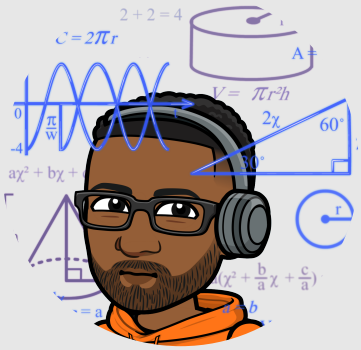


Calculus 1 with Fundamentals

Math 133

Instructor Info

Reginald L. McGee II, Ph.D.

Pronouns: He/Him/His

Student Hours: M 1-1:45pm, T 6-7:30pm, F 9:30-10:30am, or by appointment

Swords 326

x2635

https://mathcs.holycross.edu/∼rmcgee/

rmcgee@holycross.edu

Course Info

Monday & Tuesday & Wednesday & Friday

2:00-2:50pm

Stein 217

Equity and Inclusion

You are all welcome and belong here. I will always work to make our classroom a safe place for everyone to contribute, learn, and grow no matter your identity, background, or circumstances. Please do not hesitate to reach out if I can do anything to improve the classroom climate. In addition, I expect our classroom to be a place where we respect one another and support each other's learning.

Overview

MATH 133 is the first semester of a two semester sequence in single variable calculus.It focuses on properties of functions defined on subsets of the real numbers and that take values in the real numbers. Two new concepts, *continuity* and *differentiability*, form the heart of the course. Chapter 1 of the text discusses the several types of functions, and their properties, that will be regularly encountered this semester. Chapters 2, 3, and 4 introduce calculus concepts.

Learning Objectives

- Demonstrate understanding of the core concepts of differential calculus
- Demonstrate proficiency with algebraic manipulations, exact calculations, graphical analysis, basic functions and their properties
- Exercise written and verbal communication of mathematics
- Develop both independent and collaborative problem solving skills

Material

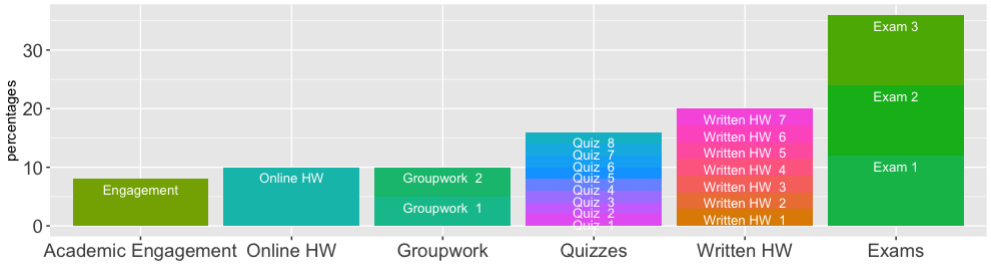
Required Texts

Strang, G., & Herman, E. J. *OpenStax Calculus (v. 1).* 2016.
https://assets.openstax.org/oscms-prodcms/media/documents/Calculus_Volume_1_-_WEB_68M1Z5W.pdf

Other

We will be using the *free* online homework package WebWork. Online assignments can be accessed from the Canvas course page.

Grading scheme overview



I do not use an absolute scale to determine letter grade ranges. Pre-final grade range cutoffs may begin lower than those of a standard scale.

Final grades will be determined from the pre-final grade range and your score on a comprehensive final exam that will modify your pre-final grade range as described below.

Final Exam Percentage	<60	60-69.4	69.5-79.4	79.5-89.4	89.5-100
Final Grade if Prefinal: B,C,D	Next Grade Below +	Pre-final grade -	Pre-final grade	Pre-final grade +	Next Grade Above -
Final Grade if Prefinal: A	B +	B +	A -	A - | A	A

Covid-19

- If you feel sick, do not come to class.
- For the safety of everyone, masks are required over your nose and mouth during student hours. You will be asked to leave if you are noncompliant.

E-mail Policy

- I will only respond to class-related emails recieved from your "g.holycross.edu" email address.
- Please begin with a salutation and also identify yourself in your email. Emails that do not follow basic email etiquette may be ignored.

Accommodations for accessibility

Any student who feels the need for accommodation based on the impact of a disability should contact the Office of Accessibility Services (https://www.holycross.edu/health-wellness-and-access/office-accessibility-services) to discuss support services available. Once the office receives documentation supporting the request for accommodation, the student would meet privately with Accessibility Services to discuss reasonable and appropriate accommodations. The office can be reached by calling 508-793-3693 or by visiting Hogan Campus Center, room 505.

Grading and assignment notes

Your pre-final course percentage will be computed as follows:

Academic Engagement	8 %
Groupwork	10 %
Online Homework	12 %
Weekly Quizzes	16 %
Written Homework	18 %
Midterm Exams	36 %
Total	100 %

The aggregate online homework score, each written assignment, each group assignment, each quiz, and exams will receive a numerical score which will contribute to the appropriate percentage. At the end of the semester, total course percentages will be used to determine your pre-final grade range. Your pre-final grade range will be modified according to your final exam score as described on the first page. I do not use an absolute scale to determine letter grades ranges.

(i) Academic engagement includes effort observed throughout the course, contributing to a positive learning environment by asking questions and collaborating during in-class problem solving, attending student hours, participating in Canvas discussions, proper mask wearing in student hours, answering questions, submitting Creativity in Progress Reflections after in-class problem solving, attending class, etc. You should aim to be doing many of these activities “most of the time" or “all of the time" as opposed to “some of the time" or “none of the time."

(ii) The online homework is implemented through WebWork and are assigned to promote proficiency with routine calculus calculations. For an 80% on the online homework you need to do 5 problems for every WebWork assignment. For a 90% you need to do 8 problems on every WebWork assignment. The first four WebWork assignments will close at 10pm on Sat. October 21st and the rest will close on Sat. December 2nd.

(iii) Written homework consists of less routine problems, and are meant to challenge you to synthesize concepts and expose you to new aspects of the material. Written homework problems are generally quiz or exam level problems. A portion of the written homework will be writing assignments and reflections. Written homework will usually be due on Wednesdays at the beginning of class, your submission should be uploaded to Canvas as a single Portable Document Format (PDF) document. The lowest written homework will be dropped at the end of the semester.

(iv) Quizzes consist of less routine problems. There will be $\sim$8 quizzes on the syllabus. Quizzes cover material since the preceding quiz or hour exam. The lowest quiz will be dropped at the end of the semester.

(v) Groupwork assignments are generally tasks that apply the course material and are supplemental to the homework. There are two group assignments on the syllabus. Groups will be assigned and may be rotated throughout the semester. A portion of the assignment will be evaluating how you and your group mates contributed to the assignment.

(vi) Midterm exams will be timed for 60 minutes and held in Smith Labs 155.

Midterm 1	Wed. October 4th	evening 6:30pm
Midterm 2	Wed. November 8th	evening 6:30pm
Midterm 3	Mon. December 4th	evening 6:30pm

To promote the development of a growth mindset and an environment of collaboration in our class, and not one of competition, exams will be weighted according to each student’s individual performance over the semester. Thus, your highest exam will count for 16%, your second highest exam will count for 12%, and your lowest exam will count for 8%.

(vii) The final exam is a comprehensive exam scheduled during exam period. The final exam will modify your pre-final grade.

(viii) Assignments are to be turned in electronically via Canvas as a single PDF document and the filename for the document should be:

LASTNAME-FIRSTNAME-2023-MATH133-ASSIGNMENTNAME

These filename guidelines are in part to build good submission habits for when you need to send documents for jobs, interviews, internships, etc.

Grading and assignment notes continued

NOTE: I will follow universal design principles and allow every student time and a half on exams and quizzes.

NOTE: Any end of semester travel arrangements must be made for after the final exam period.

NOTE: Out of class meetings for group assignments should be held in public spaces on campus and not in any student's dorm or residence.

NOTE: While you are allowed and encouraged to work on homework problems with your classmates, the solutions you turn in to be graded should be your own. Take care to write up solutions in your own words. Plagiarism will not be tolerated and will be treated as a violation of both the departmental policy on academic integrity and the college's policy on academic honesty.

NOTE: LATE homework will NOT be accepted once solutions are posted nor are individual WebWork extensions granted. If you anticipate you may need to turn in your homework late you should arrange that ahead of time.

When life happens

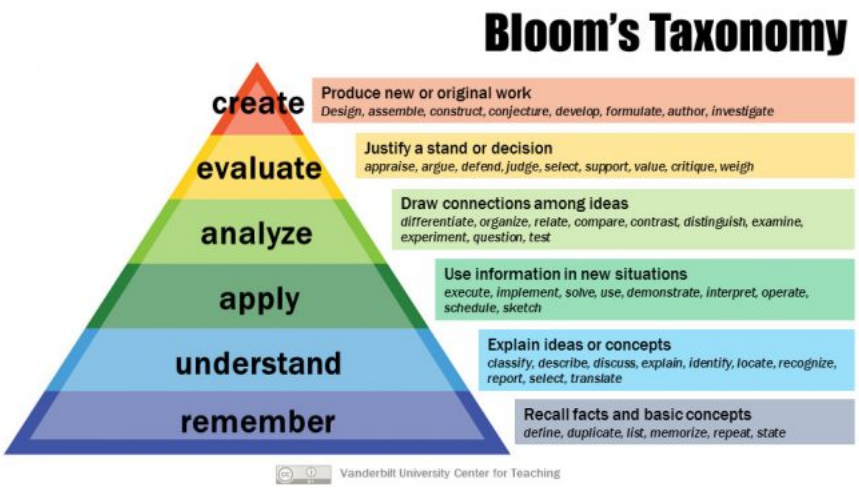
Life happens to all of us and it is important to recognize each other's humanity. Moreover, it is important to emphasize that your health and wellbeing are important outcomes of the course. The dropped assignment and assessment are built into the course for exactly when life happens. If you need to miss an exam, please let me know as soon as you become aware of the conflict. The more advance notice helps the amount of options that can be considered. If there is an ongoing situation in your life, please let me and your Class Dean know as soon as possible so that we can try to accommodate.

Calculators

Graphing calculators have become the de facto norm for high school and college mathematics and science courses. The use of calculators is allowed during in-class activities and homework, but are prohibited on quizzes and exams. Quizzes and exams will be written so that calculators are not required. Keep in mind that while it is useful to be fluent in the use of calculators, calculator fluency alone is not a substitute for understanding.

How to do well in this course

- Attend class, participate, and ask questions. Having questions means that you are processing the material, never hesitate to ask questions. Asking questions promotes class learning as others may likely have the same question.
- Go over your lecture notes as soon after class as possible. Google Ebbinghaus forgetting curve for more on why.
- Start working on homework as soon as it is assigned. This gives yourself time to process material.
- Visit student hours, even if you don't have questions it is good to simply discuss material with others.
- Read and work through the textbook and previous notes in preparation for class.
- Study topics iteratively and work towards developing a growth mindset.
- A problem-based study guide can be found on Canvas. Let your curiosity guide the problems you practice. If you're unsure of how to start a problem, there's probably a lesson in there to be learned.
- STEM+E peer tutoring is offered through Academic and Services and Learning Resources (https://www.holycross.edu/support-and-resources/academic-services-and-learning-resources) in Dinand Library Room 204. This is a great resource to complement visiting student hours.
- Become comfortable wrestling with concepts



Academic Integrity

All education is a cooperative enterprise between faculty and students. This cooperation requires trust and mutual respect, which are only possible in an environment governed by the principles of academic integrity. As an institution devoted to teaching, learning, and intellectual inquiry, Holy Cross expects all members of the College community to abide by the highest standards of academic integrity. Any violation of academic integrity undermines the student-faculty relationship, thereby wounding the whole community. Students in this class are required to read the full text of the College's Academic Integrity Policy (https://www.holycross.edu/sites/default/files/Registrar/academic_integrity_policy.pdf) and to abide by its standards.

NOTE: There will be a ritual before every exam where we all turn off our phones and places them inside our bags. If you have a potential emergency where you need to have your phone on discuss with me before the exam.

Attendance and excused absences

Students are expected to attend class regularly and to fulfill all obligations of the course as outlined on this syllabus and discussed during class. Students should also read and abide by the College's Class Attendance Policy: https://www.holycross.edu/sites/default/files/files/registrar/excused_absence_policy.pdf.

Disclaimer

Topics covered on a given day may change slightly depending on the pace set for the course. The following may be changed, but only in the event of an emergency such as school closure: due dates for homework, dates for exams, and topics covered on each exam. If this occurs, it will be announced as soon as possible electronically and in class. I reserve the right to correct typographical errors on this syllabus without comment. If you're having an issue with me or the course and do not feel comfortable bringing it up to me, you can reach out to the department chair (email), your class dean, or a faculty member you feel comfortable with.

A last note on high school mathematics versus collegiate mathematics:

"[Bomani] Jones is constantly testing a series of if this, then that propositions, writing proofs in his head, trying to find the most elegant answer at the bottom of a series of self-contradictory explanations. I view things pretty coldly and rationally, says Jones. Everything I hear is a cost-benefit analysis to a degree. There was one college course that changed everything for him. It was a theoretical math course, and it was designed to help incoming students let go of their high school notions of math: plug and chug, memorizing and executing steps without really understanding the concepts beneath them. He became fascinated with the art of simplicity, and the elegance and efficacy of reducing things to their simplest form."
Eve L. Ewing, "Bomani Jones Has a Funny Joke for You", GQ May 15, 2018