Course Syllabus

Jump to Today

Course Coordinator: Jeff Dunworth (dunworth)

Instructors:

- Section 10, 9am: Yeqin Liu (yqnl)
- Section 20, 12pm: Jeff Dunworth (dunworth)
- Section 30, 2pm: Alaa Haj Ali (ahaj)
- Section 40, 3pm: Alaa Haj Ali (ahaj)

GSIs:

- Section 10, 9am: Gleb Terentiuk (tgleb)
- Section 20, 12pm: Chinmaya Kausik (ckausik)
- Section 30, 2pm: Dylan Cordaro (dcordaro)
- Section 40, 3pm: Yutong Li (yutongli)

For information on lecture and lab meeting locations, please see this table: Class Location Information. *You must attend the lecture and lab in which you are enrolled and not to any other.*

Textbook:
Multivariable Calculus by James Stewart, Daniel Clegg, Saleem Watson, 9th edition, CENGAGE, 2020. We will cover Chapters 12-16. Editions 7 and 8 are also acceptable. To see a map between different editions of the textbook, please see this table: Lecture Plan and Edition Comparison

Calendar:
To see the topic list for each day of class, you may reference the calendar through Canvas, or you may see this table: Lecture Plan and Edition Comparison. Every class meeting, assignment, and exam has been added to the calendar for this course, and should be accessible through the Canvas calendar.

Prerequisites:
Single-variable calculus (Math 115 and 116, or honors versions or equivalents).

Course Description:
Math 115-116-215 is the standard Calculus sequence taken by the majority of students intending to major in science or engineering. The emphasis in Math 215 is on concepts and solving problems rather than theory and proof.

Topics covered:
Vectors, Vector Functions, Functions of Two and Three Variables, Partial Derivatives, Optimization (including Lagrange multipliers), Multiple Integrals, Calculus of Vector Field, Line Integrals and Surface Integrals, Green's Theorem, Stokes' Theorem, and the Divergence Theorem.

Class and Lab meetings:
Lectures meet Mondays, Wednesdays, and Fridays. Labs meet Tuesdays or Thursdays, depending on your section. For location meeting information, please see this table: Class Location Information

Office hours and other help:
You are encouraged to go to Office Hours! Please see this document: Office Hours

Links to an external site.

for times and locations. All Math 215 instructors and GSIs offer three office hours per week, and you can attend any of them.

In addition to attending office hours, students are encouraged to seek help from the Math Lab (B860 EH), which offers free, walk-in tutoring to students enrolled in mathematics courses numbered through 216. All Math 215 instructors and GSIs hold at least one office hour per week in the Math Lab.

Grading and Course Policies:
Students will be evaluated on the basis of

- **Online Homework:** 10%
- **Written Homework:** 20%
- **Lab work:** 10%
- **Midterm Exam 1**: 15%. Thursday, February 12, 6:00-8:00 pm, location TBA.

- **Midterm Exam 2**: 15%. Thursday, March 26, 6:00-8:00 pm, location TBA.
- **Final Exam**: 30%. Monday, April 27, 10:30am-12:30pm, location TBA.

Roughly speaking, for people who pass the gateway exam the final grade distribution historically follows the following pattern:

Points Total	95-100	90-95	85-90	80-85	75-80	70-75	65-70	50-65	40-50	0-40
Likely Letter Grade	A+	A	A-	B+	B	B-	C+	C	D	E

In the (unlikely) case that this table would result in a final grade distribution that is significantly lower than the historical average, then a more generous table may be used. The typical (and expected) median grade for the course is a B.

Unless something truly strange happens, you can expect that a similar distribution will hold this term.

You have the ability to access all of your raw scores through the various systems (Gradescope, Canvas, WebHW) that Math 215 uses. Since this is a second year math class, it is expected that you can locate this data and estimate your grade on your own, though please reach out to your instructor if you have questions.

Gateway exam:
The Gateway exam is a formative assessment designed to review single variable calculus. ***The Gateway opens on Monday January 12 and closes on Tuesday January 27***. You can---and are encouraged to---start taking the Gateway test *for practice*. You can access a practice Gateway exam through WebWork. It may take a few days for the WebWork system to be up and running for everyone--please be patient.

You can take the actual, proctored test multiple times, but at most twice a day for each day when the Math Lab proctoring site is open. The test consists of 10 questions, and you need to answer at least 9 questions correctly to pass the test. *Failure to pass the Gateway exam will result in 1/3 grade deduction (for example, final grade changes from A to A-).*

For more information on the Gateway exam, please see here: The Gateway Exam

Online homework:
You will complete the online homework assignments in the WebWorK system which

automatically grades your work and provides instant feedback. There will be 12 (approximately) weekly online homework assignments. You can also find the online homework assignments under the Assignments tab on this page. In general, the next online homework assignment opens shortly after the previous assignment closes. No late online homework assignments will be accepted. In order for the WebWork system to interface with Canvas, you should first access WebWork through the Canvas website, through the assignments tab. You may access the WebWork system here: WebWork

For more information on the WebWork assignments, please see here: A note on homework assignments

Written homework:
There are 12 written homework sets. These are to be submitted on Gradescope

Links to an external site.

. ***No late homework assignments will be accepted.*** The two lowest homework scores from the first 11 homework sets will be dropped. The final homework set will be graded for everyone. A selection of homework problems will be graded each week.

For more information on the written homework assignments, please see here: A note on homework assignments

For more information on how to submit an assignment to Gradescope, please see here: Gradescope Instructions

Labs:
In addition to the lectures, there is a lab *each week after the first*. Each lab is run by a GSI and will be used for two purposes:

- Recitation, where the lab instructor goes through problems, answers questions, and generally tries to enhance students' understanding of the material.
- Working in groups with computational tools in order to gain an increased understanding of some concepts in the class, especially visualization in three dimensions. You will be asked to submit a few simple lab reports during the semester.

Your participation in the lab classes as well as your lab submissions will be graded: this accounts for 10% of the total grade. The labs do not meet the first week of classes. For more information about the labs, please see here: Lab Information

Exams:
The two midterms are non-cumulative, but the final exam is cumulative.

- Calculators and notes are **not** allowed during the exams.
- **Exam dates and times are firm.** You may request an alternate exam for illness, family emergency, or serious and unavoidable conflict with some other class. However, poor planning on your part or conflicting personal travel plans are not acceptable reasons. The most common acceptable reason is course conflict. Please read our policy on alternate exams here: Alternate Exam Policy
- **To request an alternate exam, you must fill out the appropriate survey form**: Exam 1
- Links to an external site.
- , Exam 2
- Links to an external site.
- , and Final Exam
- Links to an external site.
- . **Please explain your conflict clearly.**
- Students requesting SSD accommodations on exams (or lectures/labs) **must** get these from the SSD office
- Links to an external site.
- **and** fill out this form: SSD Accommodation Notification
- Links to an external site.
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- University policies regarding religious exemptions will be followed.
- If a conflict (usually illness) appears shortly before the exam, please email the course coordinator as well as following the above procedures.

If you have questions about alternate exam arrangements, please first see this page: Alternate Exam Policy. If your question is not answered by information on that page, please reach out to the course coordinator.

Study Groups:
Study groups have been shown to help build content knowledge, enhance self-sufficient collaborative learning skills, increase student confidence, and pinpoint subject areas that students need to focus on the most — we strongly believe that students will derive

benefits from the participation in a regular study group, and you are encouraged to form or join a study group.

Policy on use of the web and AI:
First among the goals of the course is that students attain a deep conceptual understanding of the material. The assigned work in the course is chosen specifically to support this goal, and is designed to engage students with the ideas, difficulties, and challenges with which they must interact and wrestle to develop their own understanding of the material. The use of a tool such as generative AI (e.g., ChatGPT) and other web resources to obtain solutions to these problems fundamentally undermines this engagement. *Therefore, the use of these resources is explicitly prohibited*. Such use constitutes academic misconduct, and when encountered it will be prosecuted. You may also want to consider that these resources will *not be available to you during the exams.*

Classroom etiquette:
Respect your instructor and fellow students. Come to the class on time and stay until the end of the class. Class participation is encouraged but students should not discuss with each other loudly. Turn off your cell phone during the class. Last but not least, *please follow all the Covid-19 related rules as determined by the university*.

Alternative courses:
Math 285

Links to an external site.

(Honors Calculus III) is more advanced but covers similar material.

Subsequent courses:
For students who need to learn linear algebra, both Math

Links to an external site.

214

Links to an external site.

(Applied Linear Algebra) or Math 217

Links to an external site.

(Linear Algebra) would be appropriate. For students who intend to take only one further mathematics course and need differential equations, Math 216

Links to an external site.

(Introduction to Differential Equations) is the appropriate course.

Statement on accommodation of disabilities:
The University of Michigan recognizes disability as an integral part of diversity, equity, and inclusion; and is committed to creating as accessible an educational environment for students with disabilities as possible.

Disability can include: mental health conditions, ADHD, learning disabilities, autism, chronic illness, physical conditions, sensory conditions, and more.

If you anticipate or are experiencing barriers based on disability or temporary injuries, Services for Students with Disabilities (SSD) (ssd.umich.edu

Links to an external site.

) is the office that students work with to explore reasonable accommodations, tools, and resources.

- If you are already connected with SSD and have approved accommodations, please share your letter through Accommodate as soon as possible so that we can discuss how your accommodations will be implemented in this course. The sooner we know about your disability access needs, the more equipped we can be to facilitate accommodations. You may reach out to your instructor, the course coordinator, or your Disability Access Coordinator if you have any questions or concerns about your accommodations.
- If you have not connected with SSD and anticipate or are experiencing a disability-related barrier, and would like to discuss accommodations and/or resources, please contact SSD by completing their initial information form (ssd.umich.edu
- Links to an external site.
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- If you have a temporary medical injury/condition, such as a broken are, we may be able to assist in minimizing classroom barriers. In situations where

additional assistance is needed, you should contact the SSD office as noted above.

For more information, call 734-763-3000 or email ssdoffice@umich.edu.

Statement on pandemic contingency plans:
We all are hoping for a smooth semester of in-person instruction keeping in mind the current university policies regarding social distancing and masking as are needed to ensure the safety of all students, faculty, and staff. If the situation changes drastically, it may become necessary to make corresponding changes in the structure of our course, including the mix of in-person and remote activities, the types of activities, and the weights given different parts of the course in the overall grading. Therefore, what is written above must be regarded as subject to change depending on the public health situation. All decisions to modify the course plan will be made in response to recommendations from the University, state and local governments, and/or the Centers for Disease Control.

Additional support:
If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, please take advantage of the support structures available:
Counseling and Psychological Services

Links to an external site.

(CAPS) is available during and after hours, on weekends, and holidays. They may also be reached at (734) 764-8312.
The University Health Service (UHS) also provides support for mental health and drug/alcohol concerns. By phone, they may be reached at (734) 764-8320.
Both of the above services can be reached through the University Health & Counseling website

Links to an external site.

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Finally, the Dean of Students is a central resource for students to get help navigating student life, and provides support in response to many different concerns