

MATH 2300-03: Calculus III

Fall 2023

Instructor: Samuel Walsh (walshsa@missouri.edu)

Textbook: *Multivariable Calculus*
JAMES STEWART
8th edition, ISBN: 9781305266643

Lecture: MWF 11:00–11:50 AM in 310 Strickland Hall

Office hours: TW 2:00–3:00 PM in 307 Math Sci. Bldg.

Website: Canvas

Overview. Multivariable calculus is one of the central tools in social sciences, physical sciences, and engineering. For example, the motion of an incompressible (Newtonian) fluid is governed by the Navier–Stokes equation,

$$\frac{\partial \mathbf{u}}{\partial t} + (\mathbf{u} \cdot \nabla) \mathbf{u} = \nu \Delta \mathbf{u} - \nabla P, \quad \nabla \cdot \mathbf{u} = 0,$$

and the fundamental laws of electromagnetism are described by Maxwell’s equations,

$$\frac{\partial \mathbf{E}}{\partial t} = \nabla \times \mathbf{B}, \quad \frac{\partial \mathbf{B}}{\partial t} = -\nabla \times \mathbf{E}, \quad \nabla \cdot \mathbf{E} = \nabla \cdot \mathbf{B} = 0.$$

The goal of this course is fairly simple: by the end of the semester, you should be able to understand equations like those above. More than that, though, you should be comfortable enough with calculus in several variables to manipulate the quantities involved.

Prerequisites. To qualify for enrollment in Calculus III at MU (Math 2300), you must have either (i) earned a grade of C- or higher in MATH 1700 (Calculus II) at MU, or at another institution of higher learning; or (ii) earned a score of 3 or higher on the AP Calculus BC Exam. Students who do not meet the placement requirements will be dropped from MATH 2300.

Textbook and Required Materials. The physical textbook for this class is *Multivariable Calculus*, 9th ed., by James Stewart, Daniel Clegg, Saleem Watson, ISBN

9780357042922. In addition, the corresponding WebAssign Online Homework Access with Electronic Textbook is **required**.

This course is part of the AutoAccess Program designed to reduce the cost of course materials for students. You will be able to access the digital content for this course (WebAssign homework access with electronic textbook) through Canvas on the first day of class. Your student account will be charged for the digital course materials; contact the Mizzou Store at autoaccess@missouri.edu for any questions or concerns.

COVID-19 Policies/Procedures. Students in this course must abide by all University COVID-19 policies and procedures. See <https://renewal.missouri.edu/students/>.

Homework. The majority of your learning will come through completing the homework assignments. All graded homework assignments are to be done online using WebAssign. These problems are algorithmically generated and will be similar, but not identical, to the numbered problems in your textbook. You will have **three** attempts to work each problem correctly. Before attempting your graded homework, you are advised to work the practice homework problems from the textbook or online in WebAssign. A variety of online tutorials are available as you work the practice exercises online.

Do not wait until the last minute to do your graded homework assignment. If a problem occurs that keeps you from submitting your assignment on time, no extensions will be given. It is your responsibility to submit your work on time and make sure it is submitted properly. Your two lowest homework scores will be dropped. These dropped scores are designed to cover situations where you have technical difficulties or any other issue that keeps you from submitting an assignment on time.

Graded homework assignments are due by 11:59PM the night of the due date listed on the calendar, without exception. Keys, full solutions, and the “try a similar problem” feature are provided after the due dates and may be accessed in WebAssign via the “past assignments” tab.

If you have technical difficulties, please contact WebAssign Technical Support by calling (800) 354-9706 or visit www.support.cengage.com/.

Practice Homework. A list of practice homework assignments for each section covered in this class is posted on the Canvas page. In order to be successful, you should complete these assigned problems after each section is covered and ask any questions you might have during help sessions or office hours. It is extremely important that you work the practice homework problems before beginning the WebAssign graded homework. Further, there are practice exercises from each section available online in WebAssign. These assignments are labeled as “practice” and do not affect your grade. A variety of online tutorials are available as you work the practice exercises online, such as hints and viewing a guided solution after one submission.

Quizzes. A total of six quizzes will be given throughout the semester, and your two lowest quiz scores will be dropped. If you are absent when a quiz is given, please plan accordingly to use a dropped score. Makeup quizzes will **not** be given, except for University sponsored travel, in which case a letter from the Total Person Program (athletes) or University sponsor must be provided beforehand. Any quizzes missed for this reason must be made up within one week.

Exams. There will be three midterm exams and a comprehensive final. All midterm exams will be held in the regular classroom. No calculators, books, or notes will be permitted. The final location will be determined at a later time. The dates of the quizzes, midterms, and final are as follows:

Quiz 1	September	1st
Quiz 2	September	8th
Midterm I	September	15th
Quiz 3	October	6th
Quiz 4	October	13th
Midterm II	October	20th
Quiz 5	November	3rd
Midterm III	November	17th
Quiz 6	December	1st
Final	December	11th (5:30-7:30 PM, location TBA)

Makeup for the midterm exams will not be given for any reason. If a student contacts the professor prior to the exam and provides accepted documentation for missing the exam for a legitimate reason, then the student will receive on the missed exam, the percentage scored on the final. (This can only be done once during the semester.) Approved excuses include the following: (a) the exam overlaps with participation in a University sanctioned athletic or academic event, (b) the student has a serious medical condition, or (c) the student has a death in the immediate family. The following are not legitimate reasons to miss an exam: personal travel, such as vacations, weddings, or graduations; work schedules; court appearances; university events that are not sanctioned athletic or academic events, such as fraternity and sorority events, intramural sports or club activities. If a student misses the final exam for a legitimate reason, the student should consult with the instructor for possibility of a makeup or an I grade (incomplete).

Attendance. Attendance is vital to your success in this course. You are expected to attend all scheduled class sessions. If you are to miss class for any reason, you are responsible for any class notes or announcements given in class. Students who arrive late or leave early may be considered absent. Students with absences in excess of two weeks may be dropped from the class due to poor attendance

Grading. Your final grade will be determined according to the following formula:

Homework (lowest two dropped):	8%
Quizzes (lowest two dropped):	17%
Midterms:	45%
Final Exam:	30%.

There will be a curve computed at the *end of the semester*, but you will never receive a lower grade than justified by the standard MU grading scale.

Office hours. Office hours are held on Tuesday and Wednesday each week, from 2PM–3PM in Math Science Building 307. This is a time when I am guaranteed to be in my office and ready to answer questions about the course. Please do not hesitate to make use of it. You can also email me to set up an appointment if you have a scheduling conflict.

Opportunities for Extra Help. In addition to office hours, please consider the following resources for extra help:

Calculus Open Hours/Help Sessions. Free tutoring conducted by TAs that provide assistance with homework to all Math 2300 students. These sessions will be held throughout the semester (August 28 – December 7). NOTE: Help Sessions WILL NOT be held over Thanksgiving Recess. The schedule is to be posted on Canvas.

The Learning Center. Free tutoring sessions are available; visit <http://learningcenter.missouri.edu> for details.

Drops/Withdrawals. Please keep in mind the following important dates:

Monday, August 28th: Last Day to Register, Add, or Change Sections (Can be done via MyZou).

Monday, September 25th: Last Day to Drop a Course Without a Grade (Can be done via MyZou). If you drop a course prior to this deadline, there will be no record on your transcript.

Monday, December 4th: Last Day to Withdraw from a Course with a W or an F. After the last day to drop, you will need to submit a Course Withdrawal Form to the academic advising office of your college.

Disabilities. If you anticipate barriers related to the format or requirements of this course, if you have emergency medical information to share with me, or if you need to make arrangements in case the building must be evacuated, please let me know as soon as possible. If disability related accommodations are necessary (for example, a note taker, extended time on exams, captioning), please register with the Disability Center ([http:](http://)

[//disabilitycenter.missouri.edu](http://disabilitycenter.missouri.edu)), S5 Memorial Union, 573-882-4696, and then notify me of your eligibility for reasonable accommodations. For other MU resources for students with disabilities, click on “Disability Resources” on the MU homepage.

Student Conduct. A student at the University assumes an obligation to behave in a manner compatible with the University’s function as an educational institution according to the University Standard of Student Conduct. In particular, Academic Dishonesty and Disruptive Conduct are subject to the administrative sanctions.

Academic Honesty. Academic honesty is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person’s work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards academic dishonesty as an extremely serious matter, with serious consequences that range from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, or collaboration, consult the course instructor.

Academic Dishonesty includes but is not necessarily limited to the following:

Cheating or knowingly assisting another student in committing an act of cheating or other academic dishonesty.

Plagiarism which includes but is not necessarily limited to submitting examinations, themes, reports, drawings, laboratory notes, or other material as one’s own work when such work has been prepared by another person or copied from another person.

Unauthorized possession of examinations or reserve library materials, or laboratory materials or experiments, or any other similar actions.

Unauthorized changing of grades or markings on an examination or in an instructor’s grade book or such change of any grade report.

Students are expected to adhere to this pledge on all graded work whether or not they are explicitly asked in advance to do so:

“I strive to uphold the University values of respect, responsibility, discovery, and excellence. On my honor, I pledge that I have neither given nor received unauthorized assistance on this work.”

The University has specific academic dishonesty administrative procedures. Although policy states that cases of academic dishonesty must be reported to the Office of the Provost for possible action, the instructor may assign a failing grade for the assignment or a failing grade for the course, or may adjust the grade as deemed appropriate. The instructor also may require the student to repeat the assignment or to perform additional assignments. In instances where academic integrity is in question, faculty, staff and students should refer

to Article VI of the Faculty Handbook. Article VI is also available in the M-Book. Article VI provides further information regarding the process by which violations are handled and sets forth a standard of excellence in our community.

Disruptive Conduct. Conduct that creates a substantial disruption of University operations including obstruction of teaching, research, administration, other University activities, and/or other authorized non-University activities that occur on campus.

Mental Health. The MU Counseling Center offers professional mental care and can help you find the best approach to treatment based on your needs. Call (573) 882-6601 to make an appointment. Any student in crisis may call or go to the MU Counseling Center Monday-Friday between 8:00-5:00. After hours phone support is available at (573) 882-6601. University policies regarding COVID-19, Academic Integrity, Recording in the Classroom, FERPA, Intellectual Pluralism, Netiquette, Religious Holidays and Accommodations, Nondiscrimination and Disability Accommodations can be found here: <https://provost.missouri.edu/faculty-affairs/syllabus-information/>

Students may not use smart phones or any other electronic devices during class. Recording and picture taking are not allowed.

Complaints. If you have any problems or concerns regarding this course, please contact: Dr. Elena Koucherik, Calculus II & III Coordinator (koucherike@missouri.edu, 573-882-4494) or Dr. Dustin Belt, Director of Undergraduate Studies (beltd@missouri.edu, 573-882-4898). In all correspondence, include your full name, student ID #, course (Math 2300), section, and professor's name.