

# UNIVERSITY OF MASSACHUSETTS AMHERST

## FALL 2021

DEPARTMENT: **Mathematics & Statistics**      DATE: **09/01/2021 – 12/06/2021**  
COURSE NUMBER: **MATH 233**      INSTRUCTOR: **<PROF\_FULL\_NAME>**  
COURSE TITLE: **Multivariable Calculus**      CREDITS: **4**  
OFFICE: **LGRT 120**      EMAIL: **<EMAIL>**  
PHONE: **<PHONE> (cell)**  
OFFICE HOURS: **Monday and Friday: 2:20 PM – 3:20 PM (office, LGRT 1502)**

**Note:** This syllabus is subject to change, according to any future circumstances or guidelines.

### CLASS SCHEDULE

Classes	Days	Time	Classroom	Instructors
<b>MATH.233.12</b>	Monday, Wednesday, Friday	1:25 – 2:15 PM	LGRT 123	<PROF_FULL_NAME>
<b>MATH.233.12AA</b>	Tuesday	1:00 – 1:50 PM	LGRT 171	<PROF_FULL_NAME>
<b>MATH.233.12AB</b>	Tuesday	4:00 – 4:50 PM	LGRT 206	<PROF_FULL_NAME>

### TEXTBOOK:

**Title:** *Calculus: Early Transcendentals*  
**Author:** James Stuart  
**Edition:** 8th Edition: Customized Hybrid Edition

### WebAssign

**A graph/grid paper notebook is recommended for the class.**

**Recommended Graphing Calculator:** TI-84 or TI-86.

Calculators will not be allowed on any exam.

**Note:** The eBook and course software are **automatically billed** as part of your registration fee for this course. Do not purchase these materials on your own. You will be billed by the Bursar's Office for the cost of these materials.

If you need a loose-leaf copy of the book (not required), in addition to the WebAssign access code and the e-book, you can buy one for \$35 through this link: <LINK>

In the same page, you will find information about the **Cengage Mobile App** (to get 24/7 online and offline access to your course, flashcards, study tools, eBook, etc), WebAssign Tips & Training Tools, and Technical Support & Troubleshooting.

### COURSE OVERVIEW:

Math 233 is the third semester of the calculus sequence. It develops the extension of single-variable calculus to functions of several variables. In particular, it covers vectors in two- and three-dimensional space, partial derivatives, double and triple integrals, line integrals, and surface integrals. The culmination of the course is the generalization of the fundamental theorem of calculus: Green's theorem, Stokes's theorem, and the Divergence Theorem.

### MEDICAL ABSENCES

**If you become ill it is important that you test and ensure that you have a negative test before coming to class.**

In such a case you should contact your instructor (for homework and exams) and your discussion TA (for quizzes) to make alternative arrangements.

### HOMEWORK POLICY

Homework assignments is delivered through WebAssign platform. Each homework set will have a due date and the work should be submitted by 11:59 PM of that date. If you miss the deadline of a homework assignment, you can still complete the assignment up to 7 days after the due date, by requesting an automatic extension through WebAssign, with a 30% penalty applied in the portion of the assignment not submitted by the due date. Each automatic extension is valid for 24 hours, but if it is requested on the last day of the extension period, the extension will only be granted until the 7-day extension period closes.

Please note that there are no extensions for the last sets of homeworks which are due on the Reading Day, **Thursday, December 9th**.

You will have 5 attempts at each question (except for true/false questions where there is only one attempt) on homework assignments.

There is no rescoring or partial credit for homework, for any reason.

### QUIZZES

There will be a quiz every week during discussions, based on the material covered during lectures the previous week. There are no extensions for quizzes, but instead the lowest (1) quiz score will be dropped at the end of the semester, to accommodate for any reason a quiz might be missed.

### EXAMS

This course will have two evening midterm exams and a final exam.

Tentative exam dates are:

- **Exam 1:** Thursday, October 14th, 7-9 PM (location varies for different sections; ask your instructor)
- **Exam 2:** Thursday, November 18th, 7-9 PM (location varies for different sections; ask your instructor)
- **Final Exam:** TBA

Sections covered on individual exams will be announced beforehand.

The final exam will be cumulative, with some emphasis placed on topics covered since those on the second exam.

### Exam Policies

Please be aware of the exam rules:

- **No Calculators:** No calculators or any other electronic devices are allowed to be used during the exam.
- **Phones Turned Off:** Phones must be turned off during the exam. Using a phone during the exam will be considered cheating and handled accordingly.
- **No Notes:** No formula sheets, notes, or any other materials will be allowed during the exam.
- **Student ID:** You must present your student ID when submitting your exam, so please bring your ID to the exam room. If you do not have your student ID you will not be allowed to submit your exam.
- **Late Arrival:** If you arrive late to the exam, you might be allowed to participate in the exam. However, you will not be given extra time to complete the exam; all exams will end at the stated times. Please give yourself plenty of time to get settled in the exam room.

### Make-up exam policy

You are expected to take all three exams at the regularly scheduled times. Re-taking of exams is not allowed in this course: once an exam has been taken it cannot be retaken or made up.

Reasons for taking an exam at a different time are limited to the following:

#### 1. Multiple evening exams at the same time

By official university regulations, you should go to the Registrar's Office for a statement of conflict (see Section X of that document for more details). The Registrar will determine which course has precedence. You should then give their form to the instructor of the course that is required to give a make-up. Two weeks' notice is required (see deadlines below). Failure to do this in a timely fashion may result in a zero on the examination.

**For Exam 1 conflicts:** notify your instructor by Thursday, September 30th.

**For Exam 2 conflicts:** notify your instructor by Thursday, November 4.

**For Final exam conflicts:** at least two weeks before the final exam according to the final exam schedule on SPIRE

#### 2. Medical problems

You must submit a statement from a medical professional. It is your right not to disclose any details, but we must be assured that you are medically incapable of taking the exam. A statement from a medical

professional to this effect will suffice (the doctor's note should clearly state that you were unable, for medical reasons, to take the scheduled exam). If advance notice is possible and not given, your instructor may refuse your request. If you miss an exam due to illness and advance notice is not possible, your instructor must be notified within 24 hours of the missed exam.

### 3. Emergency absences from classes

Notify the Dean of Students' Office [https://www.umass.edu/dean\\_students/](https://www.umass.edu/dean_students/). The Dean of Students office will then verify the details and notify each of your instructors.

### 4. Religious observances

State law and university regulations require that a student be excused from academic pursuits on days of religious observances. The exams as scheduled do not conflict with any observances of which we are aware. Any such claim requires notice from the student, in writing, at the beginning (first two weeks) of the semester.

### 5. Other circumstances

In case of an exceptional event beyond those covered above, contact your instructor as soon as possible and explain the problem. (You should be prepared to provide a written statement.) Your instructor will evaluate the reasons that you have given and come to a decision. Depending on the circumstances, you might be able to take a late exam penalized by some percentage.

**No make-up exams will be given to accommodate travel plans.**

## EXAM REVIEW SESSIONS

There will be some live (zoom) review sessions run by TA's/Instructors before each exam. The review sessions will go over solutions of practice problems or homework questions. You will be notified of the schedule of review sessions before each exam via Moodle.

## GRADING

Letter grades for all MATH 233 sections will be determined as follows:

Course Component	Weight
Exam 1	25 %
Exam 2	25 %
Final Exam	30 %
WebAssign Homework	10 %
Quizzes	10 %

After being determined by the above criteria, as per the grading policy of the Department of Mathematics and Statistics, the total score will be **truncated down** to the nearest integer less than or equal to the total score. (Note that truncation is not the same as rounding. For example, a score of 89.75 will be truncated to 89, not rounded to 90.) The letter grade will then be determined by the following scale:

A	90%		B+	83%		C+	71%		D+	59%
A-	87%		B	79%		C	67%		D	55%
			B-	75%		C-	63%		F	< 55%

## INCOMPLETE COURSE GRADE

Students are expected to complete all assignments (quizzes and homework) and exams by their due dates. Students who are unable to complete course requirements within the allotted time because of severe medical or personal problems may request a grade of Incomplete from the instructor of the course. Incomplete grades are warranted only if a student is passing the course at the time of the request and if the course requirements can be completed by the end of the following semester.

If you are entitled to an "incomplete" in the course you must complete an Incomplete Grade Form - you can get this form from the Academic Dean. All incomplete course assignments must be completed within a timeframe agreed between the instructor and student. An incomplete counts as an "F" until you complete the work and a grade is submitted. You only have one semester to complete the work or the "INC" becomes an "F".

## DISABILITY SERVICES – ACCOMMODATIONS

The University of Massachusetts is committed to providing an equal educational opportunity for all students. A student with a documented physical, psychological, or learning disability on file with Disability Services may be eligible for reasonable accommodations to succeed in this course. Students receiving accommodations for exams will take their exams through the Disability Services Center (DSC) this semester. Such students should obtain documentation from the Office of Disability Services and inform instructors **at least two weeks** before the exams or assignment for which the accommodation is required. Accommodations can be scheduled through:

<https://www.umass.edu/disability/students>

After your accommodations are scheduled, your instructor will receive a letter of accommodations from the Disability Services office.

**Please contact your instructor if any special arrangements should be made.**

## COURSE SUPPORT

The best way to get any questions about content answered is through the instructor and the Calculus III Tutoring Center (C3TC). C3TC will be online this semester and has drop-in hours starting from the second week of the semester. Schedules and links can be found on Moodle.

Another option is to visit the Learning Resource Center, where you may find free tutors who can help with Math 233 materials. Hours of available tutors can be found through the center's website: <http://www.umass.edu/lrc/>.

## ACADEMIC HONESTY

Since the integrity of the academic enterprise of any institution of higher education requires honesty in scholarship and research, academic honesty is required of all students at the University of Massachusetts Amherst. Academic dishonesty is prohibited in all programs of the University. Academic dishonesty includes but is not limited to: cheating, fabrication, plagiarism, and facilitating dishonesty. Appropriate sanctions may be imposed on any student who has committed an act of academic dishonesty. Instructors should take reasonable steps to address academic misconduct. Any person who has reason to believe that a student has committed academic dishonesty should bring such information to the attention of the appropriate course instructor as soon as possible. Instances of academic dishonesty not related to a specific course should be brought to the attention of the appropriate department Head or Chair. Since students are expected to be familiar with this policy and the commonly accepted standards of academic integrity, ignorance of such standards is not normally sufficient evidence of lack of intent ([http://www.umass.edu/dean\\_students/codeofconduct/acadhonesty/](http://www.umass.edu/dean_students/codeofconduct/acadhonesty/)).

**Chegg, CourseHero, Discord and other online help resources:** Seeking answers from any website is a clear violation of the academic honesty policy, while submitting course materials to these sites or similar ones is a violation of the instructor's copyright. Instructors may be monitoring such websites throughout the semester.

## GEN ED STATEMENT

MATH 233 is a four-credit General Education course that satisfies the R1 (Basic Math Skills) and R2 (Analytic Reasoning) general education requirements for graduation. The General Education Program at the University of Massachusetts Amherst offers students a unique opportunity to develop critical thinking, communication, and learning skills that will benefit them for a lifetime.

## LEARNING OUTCOMES FOR ALL GENERAL EDUCATION COURSES

Math 233 satisfies the following General Education objectives:

- *Content:* Students will further their Calculus understanding by applying the analysis of single variable functions learned in previous calculus courses to functions of multiple variables.
- *Critical Thinking:* Students will use mathematical models to understand rates of change and cumulative change in dynamic systems, and employ computational skills to find these rates of change and cumulative change efficiently.
- *Communication:* Students will develop their writing skills by articulating their reasoning of computations through a sequence of logical steps.
- *Contextualizing:* Students will apply the theoretical concepts of calculus to real-world and theoretical problems, such as finding the position or distance traveled of an object moving in three dimensional space, or using density functions to calculate total mass, total charge, or total probability.

## LEARNING OUTCOMES FOR THE R1 AND R2 DESIGNATIONS

Because Math 233 presupposes basic math skills, it carries the designation for the Basic Math Skills requirement (R1). In addition, the course satisfies the following objectives of the Analytic Reasoning requirement (R2):

- *Advance a student's formal or mathematical reasoning skills beyond the level of basic competence:* In learning calculus in Math 233, students will think critically and advance their mathematical literacy and analytical skills by learning to extend previous theories in calculus to higher dimensional spaces.
- *Increase the student's sophistication as a consumer of numerical information:* Students will connect the ideas of rates of change and cumulative change to various disciplines such as physics, statistics, economics, and engineering by analyzing and solving problems in both real life and theoretical applications.
- *Indicate the limits of formal, numerical, quantitative, or analytical reasoning and discuss the potential for the abuse of numerical arguments:* Students will learn methods of both estimating and computing cumulative change. Students will analyze when it is appropriate to use an estimation, and be able to gauge the accuracy of their estimations.

## IMPORTANT DATES

**September 1 – Wednesday**

First day of Classes

**September 6 – Monday**

Holiday. Labor Day

**September 8 - Wednesday**

Last day of Add/Drop Period

**September 8 - Wednesday**

Classes follow **Monday** schedule

**October 14 - Thursday**

**Exam 1: 7:00 – 9:00 PM**

**November 11 – Thursday**

Holiday. Veterans' Day

**November 18 – Thursday**

**Exam II: 7:00 – 9:00 PM**

**November 23 - Tuesday**

Classes follow **Thursday** schedule

**November 23 - 28**

Thanksgiving Holiday Recess

**November 29 – Monday**

Classes Resume

**December 6 – Monday**

End of classes for the Fall Semester.

**TBA**

**Final Exam: 6:00 – 8:00 PM**