

Math 233: Course Description

July 16, 2021

1 Basic information

Course title: Calculus III

Instructor: Xiaojiang Cheng (xiaojiangcheng@wustl.edu)

AI: Sanah Suri (s.sanah@wustl.edu),

Class time: 9:00AM - 10:45AM MTWRF–

Office Hours:

- * Tuesday 11AM - 12PM; Thursday 4PM - 5PM (Sanah Suri)
- * Wednesday 11AM - 12PM; Friday 6PM - 7PM (Xiaojiang Cheng)

2 Lectures

- * All lectures will be given online via Zoom. Links can be found in MyCanvas portal.
- * All lectures will be recorded.
- * Attending synchronously is recommended but not required.
- * In the first half of each lecture, I will spend time introducing basic concepts and definitions, as well as giving some examples. There will be a 10-minute break after this section.
- * The second half of each lecture will be discussion section. Be ready to cooperate with others and solve problems!

3 Textbooks

- * The official textbook is *Calculus III Workbook* by Blake Thornton:
Getting a copy of it is not necessary.
- * Another useful resources is:
Calculus-Early Transcendentals, 8th Edition by James Stewart

4 Grading

Your total grades will be composed by the following parts:

Weekly Homework: 40%

Weekly Quiz: 20%

Final Exam: 40%

- * There will be 4 weekly homework sets in total (Week 1-4), each of which will contain assignments on WeBWork and a written problem set.
- * There will be 4 weekly quizzes (Week 2-5), Which will remain open for 12 hours on Tuesdays. Once you begin, you will be required to finish the quiz in 60 minutes.
- * The Final Exam will be fully online. The date is scheduled to be the last day of class.
- * Contact me as soon as possible if you can not make any of the quizzes or exams.

5 Course Plan

As a natural continuation of Calculus II, we study geometry and calculus over more complicated geometric objects. More concretely, the main contents of this course can be summarized as follows:

- * Three-dimensional spaces, dot and cross product, geometry;
- * Vector functions, curves;
- * Functions of several variables, partial derivatives, Lagrange Multipliers;
- * Double integral, triple integral, polar, cylinder, spherical coordinates;
- * Integrals over curves and surfaces, Stokes theorem.

Expected Course Outcome:

We will not focus on rigorous definitions and proofs of theorems, but calculations will be emphasized. After finishing the course, students should understand how the concepts are naturally introduced, how the theorems should be correct; should be familiar with computations; should be able to solve practical problems using techniques taught in the course.

6 Policies

- * The quizzes and final are open books, you may use any materials you like, as well as tools including scientific calculators(Graphing calculators or any calculators that can be used to calculate integrals are NOT allowed). However, you must complete them by yourselves and without any unauthorized help from others.
- * You are allowed and encouraged to discuss with others about homework problems, but you must write down by yourself. Copied answers are invalid and will receive no scores.

- * Attendance is *OPTIONAL*, you can check the course videos at any time you want. However, if you can not make any of the quizzes or the final, please let me know as soon as possible.
- * If you can not finish your homework assignments, but have good reasons, please let me know.