

Math 253: Calculus III

Fall 2020, 4 credits

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Office: Chapman 304A

Office Hours: W 1:00-2:00 p.m., R 9:15-10:15 a.m. or by appointment made prior to that day.

Class meetings: 8:00 a. m. – 9:00 a. m. MWRf on Zoon (the link is provided on Blackboard).

Office Hours: Please email me if you need assistance on anything course related. Inquiries from students will be acknowledged promptly — if I do not respond within one business day please email me again.

Course Content, Topics, and Goals:

This course introduces multi-variable calculus. The textbook is J. Stewart, *Calculus*, 8th ed. We will cover chapters 12-16. Topics include:

- Vectors and the Geometry of Space, Chapter 12.1- 12.6;
- Vector Functions, Chapter 13.1 – 13.4;
- Partial Derivatives, Chapter 14.1- 14.8;
- Multiple Integrals, Chapter 15.1- 15.9;
- Vector Calculus, Chapter 16.1- 16.10.

Topics include vectors and vector algebra, vector functions and theory of curves, partial derivatives, multiple integrals and integrals along curves/surfaces, and gradient/divergence/curl operations. Both analytic computations and geometric understanding will be emphasized. At the end of this course you should be able to apply the tools of single-variable and multi-variable calculus to problems which arise in other subjects, such as science and engineering.

Prerequisite: MATH F252X Calculus II with C- or better, or Earning a 4 or 5 on the BC AP Calculus exam.

Instructional Methods: This course will be lecture based though a lot of attention will be paid to problem solving. Three days a week (MWF) will be devoted to lectures. You will always have the opportunity to ask questions at the beginning and throughout the hours. The questions are a great use of the class' time.

The fourth day (Thursday) is dedicated to working on homework problems or projects addressing mathematical issues related to the course. There will be also a **weekly quiz** on

recent homework problems. No make-up quizzes, but your lowest quiz score will be dropped.

Homework will be assigned every class and collected **once a week** on Friday. You will need a computer with **access to the internet** since all assignments, including homework assignments, will be posted **on Blackboard after each class**.

Two midterm exams will be announced at least one week in advance. Make-up midterms are not allowed unless there is an extreme circumstance and you have written documentations. In such instances I should be notified by the day of the exam. Contact me as soon as possible if you are going to miss an exam. Students athletes must have work completed usually prior to leaving on road trips. Incompletes will be given out due to extreme circumstances beyond your control.

The **final exam** is scheduled on Wednesday, May 2, 8:00 – 11:00 a.m. The exam is comprehensive. It is against the department policy to give earlier. *Make-up final exam is not allowed.*

The grading scale. You will be graded not only on getting a correct answer, but on clarity of exposition. Avoid shortcuts, show the steps in a correct solution.

Please, keep all graded work until you get your final grade.

Scale:	A+	97% or greater
	A	94-96%
	A-	90-93%
	B+	85-89%
	B	80-84%
	B -	75-79%
	C+	70-74%
	C	65-69%
	C-	60-64%
	D	50-59%

Grading:	quizzes 10%
	class activity and worksheets 10%
	two midterms 45%
	final exam 25%

	homeworks and projects 10%
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I reserve the right to improve the grades. Decisions made will be in part, but not exclusively, on class participation, punctuality, and attention to learning from mistakes. You will also be able to get extra points.

Commitment. This course requires a commitment from you. You must come to class in time, actively work at the class and do the homework problems. Each day I will also assign a reading assignment. This will be material from the text, which is to be covered the next class period. Please do the reading. Research into math education has revealed that students who come to class having some idea of what is to be covered are more likely to understand that material in the lecture and in subsequent reading of it. Do not attempt the problem without reading the relevant material!

HOW TO BE SUCCESSFUL

1. Attend every class. Write down all examples worked in class.
2. Do all the assigned homework problems on time. Work more if you could not solve the assigned ones without a lot of help from someone else.
3. Get help about ideas and problems you do not understand. The oftener you visit me the better grade you will get.

Collaboration: You are encouraged to work together (**not copping!**) going through the homework problems. You will also have class projects to work in small groups.

Attendance: Attendance is not included as part of your grade but it would be counterproductive for you to skip classes. Students that have not participated substantially in the course (not attending class, failing quizzes in sequence, failing the first exam) will be dropped. I will be less sympathetic with issues arising for students who do not bother coming to class.

Course Calendar:

Here is a tentative schedule of the book sections we will cover during the coming weeks:

8/24 – 8/28	Sections 12.1 – 12.3
8/31 – 9/4	Sections 12.4 – 12.6
9/7 – 9/11	Sections 13.1 – 13.2, Labor Day
9/14 – 9/18	Sections 13.3 – 13.4
9/21 – 9/25	Exam 1, Sections 14.1 – 14.2
9/28 – 10/2	Sections 14.3 – 14.5
10/5 – 10/9	Sections 14.6 – 14.8
10/12 – 10/16	Sections 15.1 – 15.2
10/19 – 10/23	Sections 15.3 – 15.5

10/29 – 10/30 Exam 2, Sections 15.6 – 15.7
11/2 – 11/6 Sections 15.8 – 15.9
11/9 – 11/13 Sections 16.1 – 16.3
11/16 – 11/20 Sections 16.4 – 16.6
11/23 – 11/27 Section 16.7, Thanksgiving break
11/30 – 12/4 Sections 16.8 – 16.10

Support Services:

Math Lab. If you need help there is FREE TUTORING available in the MATH LAB located in CHAPMAN 305. Tutors are available throughout the week and no appointments are necessary.

Disability Services. The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. Contact the Office at 474-7043 to find out about reasonable accommodation to students with disabilities.

Computer Help. If you need computer help contact the Office of Information Technology (OIT).