MATH 10C, Calculus III

UC San Diego

COURSE SYLLABUS, SPRING 2021

Credit Hours: 4
Prerequisites: AP Calculus BC score of 3, 4, or 5, or Math 10B, or Math 20B.
Catalog Description: Introduction to functions of more than one variable. Vector geometry, partial derivatives, velocity and acceleration vectors, optimization problems. (No credit given if taken after or concurrent with 20C.)
Textbook: The required textbook for the course is Calculus: Concepts and Contexts (Enhanced with Webassign), 4th Edition, by James Stewart; published by Brooks/Cole, 2010.

- We will cover parts of Chapters 9, 10, 11, and 12 of the text.

The materials required for this class—and any other classes using Cengage products—are included in ONE Cengage Unlimited subscription. For $119.99 per semester, you get access to ALL your Cengage eTextbooks and online homework in ONE place. Four FREE hardcopy textbook rentals are also available for select titles, just pay $7.99 S&H each.
- Cengage Unlimited ISBN:
If you purchase a Cengage Unlimited subscription, you will need to add the item(s) below to your dashboard or you can purchase the materials below a-la-carte:
- Title: Calculus: Concepts and Contexts, 4th Edition
- Author: James Stewart
- ISBN-10: 0-495-55742-0
- ISBN-13: 978-0-495-55742-5
- Course Link/Course Key: WebAssign
Note: You only need to purchase one Cengage Unlimited subscription to add any Cengage eTextbook or online homework for other classes to your dashboard at no additional cost.
Download the free **Cengage Mobile App** to get your Cengage eTextbooks and study tools on your phone.
Ask for Cengage Unlimited in the bookstore or visit **cengage.com/unlimited** to try it for free.
Beware of sites that are selling discounted Cengage Unlimited subscriptions. These sources are likely unauthorized sellers who have acquired access codes illegally, and transactions with such sources may pose a risk to your personal information.

- Technical Support link: www.cengage.com/support
    o This is your technical support link. Feel free to use this link if you have an issue to create a case with technical support. Most of the information will already be filled out for you.

Attendance: Attending the lecture and the discussion session is a fundamental part of the course; you are responsible for all material presented in the lecture whether or not it is discussed in the textbook. You should expect questions on the exams that will test your understanding of concepts discussed in the lecture.

Instructor and Contact Information

Instructor: Kisun Lee
Office Hours: MWF 10:00-11:00am
E-mail: kil004@ucsd.edu

Course Websites

Course Information: http://canvas.ucsd.edu

On-line Discussions: http://piazza.com/ucsd/spring2021/math10c

Course Description and Learning Outcomes

Course Title: Calculus III

Course Meeting Times: All classes will be done asynchronously. All pre-recorded lectures will be uploaded onto Canvas. Pre-recorded lectures will be played at regular lecture times (MWF 11:00-11:50 am). The instructor will also participate in these lecture times. Students are encouraged to take part in these pre-recorded lectures and ask questions to the instructor.

Teaching Assistants, Office Hours, and Meeting Locations:

TA	Email Address	Recitation Location	Office Hours
Yifan Xiao	yix001@ucsd.edu		6-8 pm Thursday 8-10 am Friday
Gary Peng	g1peng@ucsd.edu		3-5 pm Tuesday

Joyce Hoong	*Supplemental Instruction*	
j2hoong@ucsd.edu	Mondays	1:00-1:50 PM
	Wednesdays	1:00:1:50 PM
	Fridays	12:00-12:50

Course Organization and Participation

This course will consist of lectures and recitations. You are required to attend all scheduled sessions at all times.

As your instructor, my role is to facilitate the lectures, coordinate with the teaching assistants to link lecture to recitation, provide you with ample assignments and assessments to gauge your understanding and knowledge of the subject matter, provide feedback on your performance, and be available for assistance when needed.

As students, you are expected to take your responsibility seriously, attend and participate in all of the class discussions, behave in a respectful manner to your instructor, TA, and fellow students at each class meeting, complete all assignments in a timely and professional manner, study the subject matter outside of class time, and ask for help when necessary.

Course Requirements and Grading

HOMEWORK: Homework will be assigned weekly with due-date on **every Tuesday** via WebAssign.

QUIZZES AND TESTS: We will have eight weekly quizzes on every Friday **(except May 14th)** via WebAssign. Quizzes are available on WebAssign from 11 am (PT) to 7 pm (PT) on Friday. Once you start the quiz, we will have **30 minutes** to submit it. Submissions will not be accepted after your time (30 min.) expires or after 7 pm (PT) on Friday. Your cumulative quiz grade will be based on the best 7 of the 8 quizzes.

Exams: There will be two midterm exams **(60 min.)** and a final exam **(170 min.)** We will use Gradescope for the exams. Exams are available on Gradescope from 11 am (PT) to 7 pm (PT) on the scheduled day. Once you start the quiz, we will have **60 or 170** minutes to submit it. Submissions will not be accepted after your time expires.

Make-up Exams: Make-up exams will not be given.

Grading: We use the following method to determine the final letter grade:

- 20% Homework, 20% Quizzes, 20% Midterm Exam I, 20% Midterm Exam II, 20% Final Exam

There will be no curve, but we may adjust the scale to be more lenient (depending on the performance of the class).

Letter grades will be determined based on the following intervals. ***Do not expect any deviation from the following scale:***

A+: 97-100

A: 93-97

A-: 90-93

B+: 87-90

B: 83-87

B-: 80-83

C+: 77-80

C: 73-77

C-: 70-73

D+: 67-70

D: 63-67

D-: 60-63

F: Below 60

Important Dates Throughout the Term

Monday, March 29 – First Day of Classes

Monday, April 19 - Exam 1

Friday, May 14 - Exam 2

Monday, May 31 - Memorial Day observance (no class)

Friday, June 4 – Final Instructional days

Friday, June 11 – Final

Tentative Course Schedule

Please use this as an approximate class schedule; section coverage may change depending on the flow of the course.

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	**Mar. 29** 9.1 3D-Coordinate Systems		9.2 Vectors	Discussion	9.3 The Doc Product
2	**Apr. 5** 9.4 The Cross Product		9.4 The Cross Product	Discussion	9.5 Eq. of Lines and Planes
3	**Apr. 12** 9.5 Eq. of Lines and Planes		9.5 Eq. of Lines and Planes	Discussion	Exam 1 Review
4	**Apr. 19** Exam 1		10.1 Vector Functions	Discussion	10.2 Derivatives and Integrals
5	**Apr. 26** 10.4 Motion in Space		11.1 Functions of Several Variables	Discussion	11.3 Partial Derivatives
6	**May. 3** 11.4 Tangent Plane		11.4 Tangent Plane	Discussion	11.5 Chain Rule

7	**May. 10** 11.6 Directional Derivatives the Gradient Vector		11.6 Directional Derivatives the Gradient Vector	Discussion	Exam 2
8	**May. 17** 11.7 Maximum and Minimum Values		11.7 Maximum and Minimum Values	Discussion	11.8 Lagrange Multipliers
9	**May. 24** 11.8 Lagrange Multipliers		12.1 Double Integrals	Discussion	12.2 Interated Integrals
10	**May. 31** Memorial Day observance (No class)		12.2 Interated Integrals	Discussion	Final Exam Review
11	**June. 7**				**June. 11** Final Exam

Recommended Problems : You are encouraged to work on all problems in the textbook and ask help for any question regarding to those problems. This list provides the minimum questions that is required to ensures the understanding of material. Some selected problems among these will be dealt on discussion session.

- **Section 9.1:** 1, 5, 6, 7, 9, 10, 11, 13, 31, 32
- **Section 9.2:** 3, 7, 8, 9, 14, 15, 16, 19, 20, 22, 25, 39
- **Section 9.3:** 1, 2, 3, 4, 5, 7, 8, 9, 10, 21, 24, 25, 31, 32
- **Section 9.4:** 1, 4, 7, 9, 10, 13, 15, 17, 21, 23
- **Section 9.5:** 1, 2, 3, 4, 5, 7, 11, 13, 21, 22, 23, 25, 26
- **Section 10.1:** 1, 2, 4, 5, 15, 17
- **Section 10.2:** 9, 10, 12, 15, 16, 18, 21, 22, 23, 27, 28, 33, 36, 40
- **Section 10.4:** 9, 11, 13, 17, 19
- **Section 11.1:** 5, 6, 7, 8, 12, 15, 18, 19, 20, 45
- **Section 11.3:** 11, 12, 15, 16, 17, 19, 21, 29, 30, 49, 50, 51, 54, 55,
- **Section 11.4:** 2, 3, 5, 15, 16, 18, 19, 23, 25, 30, 31, 32

- **Section 11.5:** $1, 2, 3, 4, 13, 21, 24, 33, 37, 39$
- **Section 11.6:** $7, 8, 12, 13, 14, 15, 16, 17, 21, 27, 31, 33, 47, 48$
- **Section 11.7:** $6, 7, 14, 16, 19, 20, 35, 36, 39$
- **Section 11.7:** $21, 29, 31$
- **Review Chapter 11-Exercise :**$3, 4, 5, 11, 12, 23, 25, 27, 31, 35, 37, 48$
- **Section 11.8:** $1, 3, 5, 7, 27, 28, 29$
- **Section 12.1:** $1, 3, 4, 7, 11, 12$
- **Section 12.2:** $1, 2, 3, 4, 5, 8, 15, 17, 20, 25, 35$