Calculus III

MTH 233 [31441], Spring 2025

Mon-Wed 2:30 - 4:25, 1S-102

Instructor: Professor Abhijit Champanerkar

Office: 1S-230
Phone: 718-982-3613
Email : abhijit.champanerkar@csi.cuny.edu
Office Hours: (In 1S-230) Mon 1 - 2 pm, M 4:45 - 5:45, (In Tutoring Lab 1S-214) Wed 4:45 - 5:45
Class Homepage: http://www.math.csi.cuny.edu/abhijit/233/
Academic Calendar

Course Information

Course description In this course we will cover multivariable calculus. Topics include vectors in dimensions two and three, vector-valued functions, limits & continuity, partial derivatives and gradient, optimization and Lagrange multipliers, intergration in several variables, polar, spherical and cylindrical co-ordinates, vector fields, line integrals, surface intergrals, Green's, Stokes and Divergence theorems. Learning Goals

Prerequisite MTH 232.

Text Book We will use the book *Calculus – Early Transcendentals* by Rogawski, Adams & Franzosa, 4th Edition. W. H. Freeman & Co. (2019). ISBN# 978-1-319-05074-0. If you have a previous edition of the textbook, that will also work for this class. If you need to buy the book you can contact the college bookstore or any other online used book store.

The online homework system we will be using for this class is Webworks

Course Syllabus We will cover Chapters 12 to 17. The topicwise course outline is given here. See below for list of topics by dates for this semester.

Homework, Quizzes and Exams

- **Homework** will be posted and graded through the online homework system Webworks
- **Quizzes** will be held every week in most non-exam weeks starting from second week towards end of the Wednesday class.
- **Exams:** There will be 2 exams during the semester and a Final exam at the end of the semester. Here are the tentative dates:

- **Exam 1:** Wednesday Mar 12, **Review:** Monday Mar 10
- **Exam 2:** Wednesday Apr 30 **Review** Monday Apr 28
- **Final Exam:** TBA

Grading: The course grade will determined as follows:

- **Exams 1 and 2 -** 20% each exam
- **Final Exam -** 40%
- **Homework -** 10 %
- **Quizzes -** 10%

Help

- Use my office hours on Mondays and Wednesdays.
- Email me with your questions.
- Use Math tutoring Lab.
- **How to Study:** (1) Watch the appropriate video before class. (2) Attend class (attendance is mandatory). (3) Read the relevant sections after class. (4) Do the homework. Leave time to think about it! (5) Use the Blackboard discussion board or visit me during office hours with any remaining questions. (6) To study for a math exam, you must DO MORE PROBLEMS from past exams, homework and textbook.

Course Policies

- Attendance is mandatory.
- Cell phone usage of any kind during class and on exams is not allowed.
- Missing the Final exam will result in an F grade. Any changes to the grading policy will be announced in the class.
- You must take the Final exams at the time scheduled by the university.
- Students are not allowed to step out of the classroom during exams, except in case of emergencies.
- **Academic dishonesty:** Cheating in any form will not be tolerated. Please see CUNY Policy on Academic Integrity.
- **Disability policy:** Qualified students with disabilities will be provided reasonable academic accommodations if determined eligible by the Center for Student Accessibility. Please provide written verification of student's eligibility from the CSA. Prior to granting disability accommodations in this course, the instructor must receive written verification of student's eligibility from the Center for Student Accessibility, which is located in 1P-101. It is the student's responsibility to initiate contact with the Center for Student Accessibility staff and to follow the established procedures for having the accommodation notice sent to the instructor.

Course schedule

- Here is a tentative list of topics by dates for this semester. The topics roughly follow the course outline.

Class	Day	Date	Topic
1/2	Mon	Jan 27	12.1-12.2 Vectors
3/4	Mon	Feb 3	12.3 Dot product
5/6	Wed	Feb 5	12.4 Cross product
7/8	Mon	Feb 10	12.5-12.6 Planes in 3-space and quadric surfaces
9/10	**Tues**	Feb 18	13.1-13.2 Vector-valued functions
11/12	Wed	Feb 19	13.3 Arc Length and speed
13/14	Mon	Feb 24	14.1-14.2 Function, limits and continuity
15/16	Wed	Feb 26	14.3 Partial derivative
17/18	Mon	Mar 3	14.4 Differentiability and Tangent planes
19/20	Wed	Mar 5	14.5 Gradient and directional derivatives
21/22	**Thurs**	Mar 6	14.6 Chain Rule
23/24	Mon	Mar 10	**Review for Exam 1**
25/26	Wed	Mar 12	**Exam 1**
27/28	Mon	Mar 17	14.7 Optimization
29/30	Wed	Mar 19	14.8 Lagrange Multipliers
31/32	Mon	Mar 24	15.1 Integration in several variables
33/34	Wed	Mar 26	15.2 Double Integrals
35/36	Wed	Apr 2	15.3 Triple Integrals
37/38	Mon	Apr 7	15.4 Integration in other co-ordinates
39/40	Wed	Apr 9	16.1-16.2 Vector fields and Line Integrals
41/42	Mon	Apr 21	16.3-16.4 Convervative Vector Fields, Parametrized surface
43/44	Wed	Apr 23	16.5 Surface Integrals
45/46	Mon	Apr 28	**Review for Exam 2**

Class	Day	Date	Topic
47/48	Wed	Apr 30	**Exam 2**
49/50	Mon	May 5	17.1 Greens Theorem
51/52	Wed	May 7	17.2 Stokes Theorem
53/54	Mon	May 12	17.3 Divergence Theorem
55/56	Wed	May 14	**Review for Final Exam**
			Final Exam TBA