MATH 241: Calculus III

University of Maryland, College Park, Fall 2024

Description

An introduction to multivariate calculus, including vector and vector-valued functions, partial derivatives, and applications of partial derivatives (such as tangent planes and Lagrange multipliers), multiple integrals, volume, surface area, and the classical theorems of Green, Stokes, and Gauss. All sections of the courses will use the software package MATLAB. Requires a C- or better in MATH 141.

Time and Place

- **Lectures**: MWF 3:00pm – 3:50pm, ARM 0126
- **Discussions**:
  - 0511: TuTh 12:00pm - 12:50pm, MTHB0429
  - 0521: TuTh 1:00pm - 1:50pm, MTHB0429
  - 0531: TuTh 2:00pm - 2:50pm, MTHB0429
  - 0541: TuTh 3:00pm - 3:50pm, MTHB0429

Instructor and TA's

- **Instructor:** Dr. Ling Liang, liang718@umd.edu
  - Only for course-related questions, read this document before emailing
  - Put MATH 241 in the subject
  - Consider using office hours if your questions have many formulae that are hard to explain via email
- **Office:** 4303 Mathematics Building
- **Office Hour:**
  - In person: Wednesday 10:00am – 11:30am
  - Zoom: Wednesday 1:00pm - 2:00pm (by appointment),
    - ID: 655 909 3905
    - PWD: 2024
- **Teaching Assistants:**
  - Foivos Chnaras (0511, 0521):
    - fchnaras@umd.edu;

        - Office Hour: TT, 9am-10am, MTH 4307
    - Jianning Fu (0531, 0541):
        - jfu123@umd.edu;
        - Office Hour: TT, 4pm-5pm, MTH 3301

Texts and Resources

- ***Calculus with Concepts in Calculus***, 6th Edition, by R. Ellis and D. Gulick. (Cengage Learning, ISBN: 9781133436751). We will not use the online homework system, don't purchase that.
- ***Calculus Student Solutions Manual***, by R. Ellis and D. Gulick (Cengage Learning. ISBN: 9780759331778) (OPTIONAL)
- ***A Guide to MATLAB: For Beginners and Experienced Users***, 2nd Edition, by B. Hunt, R. Lipsman, and J. Rosenberg, Cambridge University Press, 2006. ISBN: 0521615658.
- ***Justin Wyss-Gallifent's Notes and Past Exams***
- ***UMD Test Bank***
- ***Work-in Tutoring***
- ***Math Success Program***

Homework, Quizzes and Exams

- We will not have graded homework assignments, but instead, suggested problems will be provided for you to work on at home and with your TAs.
- Three MATLAB assignments will be given and graded. You need to go through the MatlabGuide by yourself. Late assignments will not be accepted.
- There will be quizzes (closed book with no notes, cheat sheets, or calculators) every non-exam week (except week 1), Thursday in the discussion section. If you will be absent from discussion on a quiz day, you must let me and your TA know in advance with supporting documents. Make-ups will be made by your TA within one week.
- There will be three in-class exams and a comprehensive final exam (cumulative). All exams will be closed book with no notes, cheat sheets, or calculators. Excused absences will be given only with documentation and only for valid medical reasons, university business, or appearances in court. Absence for medical reasons on days when exams are scheduled requires documentation of the illness, signed by a health care professional. Make-up exams are possible, and please reach me as soon as possible. The schedule for all finals can be found at:

  https://registrar.umd.edu/registration/register-classes/final-exams/fall-2024

- We will use Gradescope (Entry code: **4JD5XD)**:

  https://www.gradescope.com/courses/837465

If you have any questions on submitting your work to Gradescope, please check the following tutorials:

https://www.youtube.com/watch?v=quBWbQ5opT0&t=0s (Mobile App)

https://www.youtube.com/watch?v=nksyA0s-Geo (Website)

For quizzes and exams, you do not need to submit your work to Gradescope, and we will handle the task.

Grading Scheme

Your grade will be calculated as follows:

- MATLAB assignments: 15% (5% each)
- Quizzes (drop two lowest): 25%
- In-class exams (two best): 30% (15% each)
- In-class exams (one lowest): 10%
- Final exam: 20%

The final grade will be rounded up:

- A: >= 90%
- B: 80% - 89%
- C: 70% - 79%
- D: 60% - 69%
- F: <= 59%

Plus and minus grades will be given, with boundaries at 7 and 3, respectively.

Academic Integrity

It is our shared responsibility to know and abide by the University of Maryland's policies that relate to all courses, which include topics like:

- **Academic integrity**
- Conduct
- **Accessibility and accommodations:** If you are registered with the ADS office, please approach me to discuss your accommodations as soon as possible.
- Harassment
- Attendance and excused absences

- Grades and appeals
- Copyright and intellectual property

Please visit https://www.ugst.umd.edu/courserelatedpolicies.html for the full list of campus-wide policies prepared by the Office of Undergraduate Studies, and follow up with me if you have questions.

Course Details (Tentative)

Date	**Sections**	**Suggested Problems**
M, Aug 26	11.1	1-23
W, Aug 28	11.2	1-18, 20-21, 27-28
F, Aug 30	11.3	1-19, 23, 32-34
M, Sept 2	**No Class for Labor Day**	
W, Sept 4	11.4	1-10, 13-15
T, Sept 5	**Quiz 1 (covers 11.1-11.3)**	
F, Sept 6	11.5	1-23
M, Sept 9	11.6	1-13, 23, 26-30
W, Sept 11	12.1	1-13, 26, 32-33
T, Sept 12	**Quiz 2 (covers 11.4-11.6)**	
F, Sept 13	12.3	1-32, 35, 39-40, 47-49
M, Sept 16	12.4	1-28
W, Sept 18	12.5	1-24
T, Sept 19	**Quiz 3 (covers 12.1, 12.3-12.4)**	
F, Sept 20	13.1	13-39, 41, 46-47, 57-70
M, Sept 23	**Review**	
W, Sept 25	**Exam 1 (covers 11-12)**	

F, Sept 27	13.2 13.3	13.2: 1-22, 29-30 13.3: 1-23, 29-35, 37-44
M, Sept 30	13.4 13.5	13.4: 1-24, 42-45 13.5: 1-17
	MATLAB 1 Due	
T, Oct 1	**Quiz 4 (covers 13.1-13.3)**	
W, Oct 2	13.5	1-17
F, Oct 4	13.6	1-51, 62-64
M, Oct 7	13.7	1-12
W, Oct 9	13.8	1-16, 19-20, 25-28
T, Oct 10	**Quiz 5 (covers 13.4-13.7)**	
F, Oct 11	13.9	1-3, 7, 17-18, 22-25
M, Oct 14	14.1	3-50, 57-64
W, Oct 16	14.2	1-13, 18, 22-29
T, Oct 17	**Quiz 6 (covers 14.1-14.2)**	
F, Oct 18	14.4	1-24, 27-30
M, Oct 21	**Review**	
W, Oct 23	**Exam 2 (covers 13, 14.1, 14.2, 14.4)**	
F, Oct 25	14.5	1-29, 32-33, 37
M, Oct 28	14.6	3-22
	MATLAB 2 Due	
W, Oct 30	14.8	1-12, 18-21, 23-25
T, Oct 31	**Quiz 7 (covers 14.4-14.6)**	

F, Nov 1	14.9	5-10
M, Nov 4	15.1	1-12, 17-25, 27-28
W, Nov 6	15.2	1-30, 32-35
T, Nov 7	**Quiz 8 (covers 14.8, 14.9, 15.1)**	
F, Nov 8	15.3	1-10
M, Nov 11	15.4	1-18
W, Nov 13	15.5	1-14
T, Nov 14	**Quiz 9 (covers 15.2-15.4)**	
F, Nov 15	15.6	5-15
M, Nov 18	**Review**	
W, Nov 20	**Review**	
F, Nov 22	**Exam 3 (covers 14.5, 14.6, 14.8, 14.9, 15.1-15.6)**	
M, Nov 25	15.7	1-13
Nov27 – Dec 1	**No Class for Thanksgiving**	
M, Dec 2	15.8	9-23
W, Dec 4	**Review**	
T, Dec 5	**Quiz 10 (cover 15.7-15.8)**	
F, Dec 6	**Review or No Class**	
M, Dec 9	**Review or No Class**	
	MATLAB 3 Due	
W, Dec 11	**Final Exam (cumulative, 4pm-6pm)**	