

**M340L-SPRING 2020 ADVANCED CALCULUS FOR APPLICATION II
SYLLABUS #53625 AND #53630**

Instructor: Dr. Jacky Chong

Office: PMA 12.140

Office Hours: T 12:00–2:00p.m., Th 1:00–2:00p.m.

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Lecture: MWF 3:00p.m.–4:00p.m. Zoom Meeting

MWF 4:00p.m.–5:00p.m. Zoom Meeting

Course Webpage. Lecture schedule, homework, as well as other important information regarding the class will be posted on the course webpage:

https://web.ma.utexas.edu/users/jwchong/math427L_fall20.html

Required Textbooks: *Vector Calculus, 6th ed.* by J. E. Marsden and A. Tromba **ISBN-10:** 1429215089. *Multivariable Calculus with MATLAB* by R. L. Lipsman and J. M. Rosenberg **ISBN-10:** 3319650696.

Prerequisites: Student must have earned at least a C- in M408D, M308L, M408L, M308S, M408S or any equivalent courses.

Course Description: Topics include matrices, elements of vector analysis and calculus functions of several variables, including gradient, divergence, and curl of a vector field, multiple integrals and chain rules, length and area, line and surface integrals, Greens theorem in the plane and space. If time permits, topics in complex analysis may be included. This course has three lectures and two problem sessions each week. It is anticipated that most students will be engineering majors. Five sessions a week for one semester.

Class Recordings. All the lectures will be recorded and made available to the students through Canvas. Class recordings are reserved only for students in this class for educational purposes and are protected under FERPA. The recordings should not be shared outside the class in any form. Violation of this restriction by a student could lead to Student Misconduct proceedings.

Exam Dates: There will be three take-home exams and one take-home final exam. The exams will be held on the following dates¹:

Exam 1: Friday, Sept. 18th to Monday, Sept. 21st (due by noon).

Exam 2: Friday, Oct. 16th to Monday, Oct. 19th (due by noon).

Exam 3: Friday, Nov. 13th to Monday, Nov. 16th (due by noon).

Final Exam: Monday, Dec. 7th to Friday, Dec. 11th (due Midnight).

Date: August 26, 2020.

¹The times are in Central Standard Time (CST).

Take-Home Exams. There will be three take-home exams. Each take-home exam is given approximately two days (weekend) to complete. The exams are open book.

Submission: All take-home exams must be submitted through Gradescope.

Final Exam: The take-home final exam is given approximately five days to complete. The exam is open book.

Suggested Exercises: Suggested exercises will be assigned regularly from the course textbook. These problems will not be collected. Students are encouraged to work in groups to help each other on the problem sets. See course webpage for the list of suggested problems.

Group Worksheets: At the beginning of each week a worksheet will be provided to the class through Canvas. The discussion sessions are devoted to solving these worksheet problems. Students will be randomly divided into groups of 4 (or 5) students; the group's task is not only to produce solutions to the worksheet problems but also to make certain that each group member participates and in the end understands how to solve the problems. The worksheets will only be graded for completeness.

Submission: Each group will submit one PDF of the solutions to the worksheet by every Friday (before Midnight) to Gradescope (choose a group representative).

MATLAB Group Projects: There will be four MATLAB group projects (assignments). These will be posted on the course webpage as they become available. The due dates are on the course schedule below. Projects are based on problems from *Multivariable Calculus with MATLAB*. Students will be randomly divided into groups of 3 students to discuss and work on the projects; each group will submit one copy of the project. Projects must adhere to the strict format provided on the course website.

Submission: All MATLAB projects should be submitted through Gradescope.

Online Quizzes. There will be four online quizzes administered through canvas. Each quiz will be 40 minutes in length. The quizzes will be released on the following dates:

Quiz 1: Tuesday, September 8th

Quiz 3: Tuesday, November 3rd

Quiz 2: Tuesday, October 6th

Quiz 4: Tuesday, December 1st

The quizzes are open book.

Participation: There are no participation points in the course. However, we still encourage active online learning through class participation. There are a few forms of class participation: (1) asking course relevant questions on Piazza (2) answering questions on Piazza (3) asking questions during Instructor/ TA office hours (4) answering zoom polls during lectures.

Course Readings: Reading the sections of the textbook corresponding to the lectured material is essential to succeeding in the course. You are responsible for the topics covered in the assigned reading, whether or not we discussed them in lectures.

Make-up Policy: ~~Make-ups for exams will only be given in the case of a documented absence due to illness, religious observance, participation in a University activity at the request of University authorities, or other compelling circumstances.~~

Grading: Course grades will be computed based on your worksheets, MATLAB projects, take-home exams, quizzes, and the final exam grades. Your course grade will be determined by the best of the following two weighted averages:

- 15% Worksheets, 24% MATLAB, 16% Quizzes, 30% Exams (10% per Exam), 15% Final,
- 15% Worksheets, 24% MATLAB, 16% Quizzes, 20% Exams (Drop lowest exam score, 10% per Exam), 25% Final.

After your weighted average is calculated, letter grades will be assigned based on the standard grading scale:

A	A-	B+	B	B-	C+	C	C-
> 92%	92–90%	89–87%	86–83%	82–80%	79–77%	76–73%	72–70%

It is possible that the cutoffs may be lower at the discretion of the instructor. However, students who receive less than 50% of the maximum possible score will automatically receive an F for the course.

Academic Integrity: Each student in the course is expected to abide by the University of Texas Honor Code:

As a student of The University of Texas at Austin, I shall abide by the core values of the University and uphold academic integrity.

You are expected to read carefully and adhere to the following instruction provided by the Office of the Dean of Students: <http://deanofstudents.utexas.edu/conduct/academicintegrity.php>. All cases of academic dishonesty will be referred to the Office of the Dean of Students.

Students with Disabilities: Students with disabilities may request appropriate accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities (SSD), 512-471-6259, <https://diversity.utexas.edu/disability/>. Notify your instructor early in the semester if accommodation is required.

Counseling and Mental Health Services: Available at the Counseling and Mental Health Center, Student Services Building (SSB), 5th floor, M-F 8:00 a.m. to 5:00 p.m., (Phone) 512-471-3515, website www.cmhc.utexas.edu. Your mental health should be your top priority, so please take good care of yourself. (I don't know whether this is still applicable for the remainder of the semester.)

Information on COVID-19. Due to the current pandemic, we will face many challenges and have to deal with many uncertainties throughout the semester. Students need to maintain a clear understanding of the situation and the university's actions amid the myriad of information/misinformation. It is encouraged that the student stay informed by frequently visiting the university's official COVID-19 webpage <https://coronavirus.utexas.edu/>. Moreover, students can visit https://onestop.utexas.edu/faq-covid19/?utm_source=evpp_website&utm_medium=banner&utm_campaign=covid_resources to see some frequently asked questions.

TENTATIVE SCHEDULE.

Below is a tentative schedule of the course with the material that I hope to cover and when. This will undoubtedly change as we progress through the semester, so check the course website regularly for updates. The sections are from the course textbook.

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
<i>Week 1</i> Aug. 24	25	First Day 26 §1.1	27	28 §1.2
<i>Week 2</i> 31 §1.3, 1.5	1 Sept.	2 §1.3	3	4 §1.4 WS01
<i>Week 3</i> 7 <i>Labor Day</i>	8 Q1	9 §1.5	10	11 §2.1 WS02
<i>Week 4</i> 14 §2.2 ML1	15	16 §2.3	17	18 §2.4 WS03
<i>Week 5</i> 21 §2.5 E1	22	23 §2.6	24	25 §3.1 WS04
<i>Week 6</i> 28 §3.2	29	30 §3.3	1 Oct.	2 §3.4 WS05
<i>Week 7</i> 5 §3.4	6 Q2	7 §4.1	8	9 §4.2 WS06
<i>Week 8</i> 12 §4.2 ML2	13	14 §4.3	15	16 §4.4 WS07
<i>Week 9</i> 19 §5.1–5.2 E2	20	21 §5.3	22	23 §5.4 WS08
<i>Week 10</i> 26 §5.5	27	28 §6.1	29	30 §6.2 WS09

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
<i>Week 11 Nov.</i> 2 §6.2	3 Q3	4 §7.1	5	6 §7.2 WS10
<i>Week 12</i> 9 §7.3 ML3	10	11 §7.4	12	13 §7.5 WS11
<i>Week 13</i> 16 §7.6 E3	17	18 §8.1	19	20 §8.1-8.2 WS12
<i>Week 14</i> 23 §8.2	24	25 <i>Thanksgiving</i>	26	27 <i>Thanksgiving</i>
<i>Week 15</i> 30 §8.3	1 Dec. 1 Q4	2 §8.4	3	4 §8.4 WS13
<i>Week 16</i> Last Day 7 Review ML4	8	9	10	11 Final Exam

Note:

- (1) **MS** means worksheet is due before Midnight (next day).
- (2) **ML** means MATLAB project is due before Midnight (next day).
- (3) **Q** means quiz is due before Midnight (next day).
- (4) **E** means take-home exam weekend. Exam is due by noon on Monday.
- (5) **Final Exam** means the exam is due before Midnight (next day).