

Syllabus for Mat2500, Fall, 2008

Call Number: 72-655

Class Time: 9:05–9:55am, Graduate Studies Building, Rm. 304

Instructor: Ming-Jun Lai

Office: Room 540 Boyd Graduate Studies Building

Office Hours: 2:30–3:30pm MWF or by appointment

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Email Address: mjlai@math.uga.edu

Text: *University Calculus*, Hass, Weir & Thomas, Addison-Wesley.

Webpage: www.math.uga.edu/~mjlai/teaching.html

Course Objectives

In this course, you will learn the multivariate differential and integral calculus. In addition, you will learn vector analysis. You will see many concepts such as *vectors*, *cross-product*, *partial derivatives*, *gradient*, *tangent plane*, *polar coordinates*, *parametric curves*, *line integrals*, *surface integrals*, etc. and many theorems such as Lagrange Multiplier Theorem, Green's Theorem, Divergence Theorem, Stokes Theorem, as well as many integral techniques for double and triple integrals.

Your Major Responsibilities

Attend the class regularly although a roll is not usually taken. Be a good citizen during the class by doing all the assignments. In particular, do the exercises after each class so that you can understand the material in the next class. Homework will not be collected. **Note that there is no way you can learn multivariate calculus without doing a lot of homework.**

There are four tests and one final examination. The test dates are as follows:

Sept. 5(TEST 1), Oct. 3(TEST 2), Oct. 29(TEST 3), Dec. 5(TEST 4), and Dec. 15(FINAL)

Please do not miss these dates. No make up tests are allowed unless you have valid reasons (sick (doctor note), accident (police note), tournaments(coach note)).

When answering homework and test problems, please use correct notation (be especially careful about parentheses and equals signs), and use complete grammatical sentences in the English language where appropriate. Calculation without explanation is incomprehensible. Messy and confused writing usually reflects messy and confused thinking, so please aim for clear thought! All work for the class is subject to the Academic Honesty Policy of the University of Georgia.

There will be a quizz every day except for the first and last day of class and four test dates. All quizzes are based on exercises in the textbook. I will not collect any other homework. Quizz grades serve for your homework grade. The best 33 out 39 quizz grades will be counted.

Tentative Schedule

I will lecture Chapters 10 and 11 in the first three weeks. Starting from Sept. 8, I will lecture Chapter 12 till the end of September. Then I will teach Chapter 13 in Oct. In Nov. and Dec., I will focus on Chapter 14. Please pay attend to the following exercises:

§11.1: #1, 4, 7, 9, 11, 21, 23

§11.2: #1, 7, 9, 19, 24;

§11.3: #1, 5, 7, [12], 19

§12.1: #3, 5, 7, 9, 13–18, 21, 22, 27, 33, 35, 37, 38

- §12.3: #5, 7, 12, 16, 25, 26, 43, 51, 57, 59, 60, 65, 66, 69
- §12.4: #3, 7, 9, 11, 15, 27, 29, 39, 40, 42, 47, [49, 50]
- §12.5: #1, 3, 5, 7, 9, 14, 17, 20, 25, 28, 31
- §12.6: #1, 5, 8, 12, 21, 23, 24, 33, 35, 39, 45, 49
- §12.7: #1, 5, 14, 17, 19, 23, 35, 39, 47
- §12.8: #1, 5, 7, 9, 10, 11, 17, 25, 27, 30, [43, 44]
- §13.1: #1, 5, 7, 15, 19, 23, 25;
- §13.2: #1, 3, 7, 11, 12, 13, 17, 19, 25, 28, 31, 35, 38, [54, 55]
- §13.3: #3, 9, 11, 13, 16, 18;
- §13.4: # 3, 7, 9, 12, 13, 18, 23, 25, 26, 31, 32
- §13.5: #9, 14, 21, 25, 29, 30, [47]
- §13.6: #4, 13, 21, 25, [35, 36, 37]
- §13.7: #1, 11, 12, 15, 19, 25, 37, 40, 43, 47, 53, 62, 65, 74
- §14.1: #18, 11, 23;
- §14.2: #1, 5, 7, 12, 15, 23, 25, 27, 43
- §14.3: #16, 8, 9, 11, 14, 19, 22, 25, 30, [38]
- §14.4: #3, 5, 7, 11, 16, 22, 23, 26, 33, [34]
- §14.5: #[1], 5, 7, 11, 13, 17, [23];
- §14.6: #2, 3, 5, 8, 17, 20, [21], 31, 32, 43
- §14.7: #2, 3, 5, 9, 10, 21, [23], 26
- §14.8: #1, 2, 5, 6, 8, 11, 13, 17, [21], 22, [27, 29, 30]

Problems listed in brackets and the following additional assignment are best saved for the better students.

- Additional and Advanced Exercises: #1, 2 of Chapter 11
- Additional and Advanced Exercises: #3, 8, 13, 19 of Chapter 12
- Additional and Advanced Exercises: #2, 7, 11, 15, 26 of Chapter 13
- Additional and Advanced Exercises: #3, 5, 9, 13, 16, 19 of Chapter 14

Grading Policy:

TEST 1	100 points
TEST 2	100 points
TEST 3	100 points
TEST 4	100 points
Final Exam.	200 points
Homework	200 points

Total 800 points

Fixed Scale:

A	90+%	A-	87 – 90_%	B+	83 – 87_%	B	80 – 83_%
B-	77 – 80_%	C+	73 – 77_%	C	67 – 73_%	C-	63 – 67_%
D	53 – 63_%	F	< 53%				