

Syllabus for Mat2260, Fall, 2011

Instructor: Ming-Jun Lai

Office: Room 540 Boyd Graduate Studies Building

Classroom: Room 455 Chemistry Building

Classtime: 12:20P-1:10P Monday, Wednesday, and Friday

Tuesday 12:30P-1:45P in Room 221 Boyd Graduate Studies Building

Office Hours: 1:30–2:30pm on Monday, Wednesday, and Friday or by appointment

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Text: Hass, Weir, and Thomas, *University Calculus*

Course Objectives

We start with a review of basic definition of integral, fundamental theorem of calculus and integration by substitution. Then we learn how to compute volumes of various solids by slicing and cylindrical shell, length of various arcs and solve separable differential equations. Next we will learn various techniques for integration. In addition, we will discuss infinite sequences and examine the convergence of series. Finally, we study vectors, their calculations, line and planes in the 3D space.

Doing homework is a must to understand the subjects. It is done through webwork.com. The web address is

https://webwork2.math.uga.edu/webwork2/Math2260_Lai_F11/

If you have a difficulty to login into the webwork, please email me ASAP. In addition, I suggest the following homework after each section. Although I will not collect them, please make sure that you can do these problems before each test.

Academic Honesty

As a University of Georgia student, you have agreed to abide by the University's academic honesty policy, A Culture of Honesty, and the Student Honor Code. All academic work must meet the standards described in A Culture of Honesty found at: www.uga.edu/honesty. Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to the instructor.

Helpful Info.

The Math. Department opens a study hall in Room 222 providing free math. tutoring for MATH2260. The open hours are 3:30pm–6:30pm Monday, Tuesday and Thursday. In addition, the free tutoring offered by Academic Enhancement will begin on the August 22nd, 2011. The web link is <http://www.uga.edu/dae>

<u>Dates</u>	<u>Section</u>	<u>Topics and Recommended Exercises</u>
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Chapter 5: Integration

8/15M	§5.1/5.2	Estimating with Finite Sums
	§5.1	#1, 3, 5, 7, 11, 19, 21, 22
	§5.2	#1, 3, 7, 9, 13, 15, 19, 29, 35, 39
8/16T	§5.3	The definite integrals

	§5.3	#1, 3, 5, 9, 11, 13, 17, 19, 29, 33, 37, 55, 59, 71, 73, 74
8/17W	§5.4	The Fundamental Theorem of Calculus
	§5.4:	#1, 5, 7, 8, 9, 23, 29, 35, 39, 43, 45, 47, 51, 53, 55
8/19F	§5.5	Indefinite Integrals and Substitution Rules
	§5.5	#7, 9, 11, 13, 17, 19, 21, 24, 31, 51, 55, 61, 63, 73
8/22M	§5.6	Area between Curves
	§5.6	#1, 3, 7, 13, 25, 27, 31, 39, 47, 51, 53, 55

Chapter 6: Applications of Definite Integrals

8/23T	§6.1	Volumes by Slicing and Rotation About an Axis
	§6.1	#1, 3, 7, 8, 11, 13, 15, 17
8/24W	§6.1	Volumes by Slicing and Rotation About an Axis (II)
	§6.1	# 19, 22, 23, 27, 28, 29
8/26F	§6.1	Volumes by Slicing and Rotation About an Axis (III)
	§6.1	#35, 39, 41, 45, 49, 50, 51
8/29M	§6.2	Volumes by Cylindrical Shells
	§6.2	#1, 3, 5, 7, 11, 15, 21,
8/30T	§6.2	Volumes by Cylindrical Shells(II)
	§6.2	# 23, 25, 28, 34, 39
8/31W	§6.3	Lengths of Plane Curves
	§6.3	#1, 3, 9, 11, 17, 27, 29, 33
9/2F	§6.4	Areas of Surfaces of Revolution
	§6.4	#9, 13, 14, 21, 29
9/5M		Labor Day and No Class
9/6T	§6.5	Exponential Change
	§6.5	#1, 3, 9, 11
9/7W	§6.5	Separable Differential Equations
	§6.5	# 19, 21, 24, 29
9/9F	§6.5	Separable Differential Equations (II)
	§6.5	# 30, 35, 37, 41
9/12M	§6.6	Work
	§6.6	#1, 3, 5, 6, 7, 8, 11, 12
9/13T	§6.6	Work (II)
	§6.6	13, 14, 15, 19, 22, 23
9/14W		Review of Chapter 6
9/16F		Test I

Chapter 7. Techniques of Integration

9/19M	§7.1	Integration by Parts
	§7.1	#1, 4, 5, 7, 9, 11, 22
9/20T	§7.1	Integration by Parts (II)
	§7.1	#29, 33, 35, 37, 43, 44, 48
9/21W	§7.2	Trigonometric Integrals
	§7.2	#1, 3, 7, 11, 15, 17, 23, 41, 43
9/23F	§7.2	Trigonometric Integrals (II)

	§7.2	
9/26M	§7.3	Trigonometric Substitutions
	§7.3	#1, 3, 5, 7, 13, 16
9/27T	§7.3	Trigonometric Substitutions (II)
	§7.3	#19, 21, 29, 39, 41
9/28W	§7.4	Integration of Rational Functions by Partial Fractions
	§7.4	#1, 3, 9, 11, 15, 19, 21
9/30F	§7.4	Integration of Rational Functions by Partial Fractions (II)
	§7.4	#29, 30, 35, 37, 43, 49
10/3M		Review
10/4T	§7.6	Improper Integrals
	§7.6	#1, 3, 5, 7, 11, 15, 35, 37, 41
10/5W	§7.6	Improper Integrals (II)
	§7.6	#47, 51, 53, 55, 63, 67, 68, 69, 70, 74
10/7F		Review of Chapter 7
10/10M		Test II

Chapter 8. Infinite Sequences and Series

10/11T	§8.1	Sequences
	§8.1	#7, 11, 13, 17, 19, 23, 25, 27, 33
10/12W	§8.1	Sequences (II)
	§8.1	#41, 43, 45, 49, 59, 66, [86], 93
10/14F	§8.2	Infinite Series
	§8.2	#1, 3, 5, 7, 11, 15, 23, 25, 27, 29
10/17M	§8.2	Infinite Series (II)
	§8.2	#35, 37, 39, 41, 42, 43, 45, 47
10/18T	§8.3	The Integral Test
	§8.3	#1, 2, 3, 4, 5, 6, 9, 10, 19, 20, 23, 27, 33
10/19W	§8.4	Comparison Tests
	§8.4	#1, 3, 4, 5, 8, 9, 10, 17, 19, 20, 25
10/21F	§8.5	The Ratio Test
	§8.5	#2, 3, 5, 9, 15, 19, 21
10/24M	§8.6	Alternating Series
	§8.6	#1, 2, 3, 5, 11, 13, 15, 19, 27
10/25T	§8.7	Power Series
	§8.7	#1, 2, 3, 5, 9, 11, 13,
10/26W	§8.7	Power Series(II)
	§8.7	#33, 35, 36, 37, 39, 40, 41
10/30F		Fall Break and No Class
10/31M	§8.8	Taylor and Maclaurin Series
	§8.9	#1, 3, 5, 7, 9, 11, 13, 21
11/1T	§8.9	Convergence of Taylor Series
	§8.9	#1, 4, 7, 8, 9
11/2W	§8.9	Convergence of Taylor Series (II)
	§8.9	#13, 19, 22, 23, 25,

11/4F	§8.9	Convergence of Taylor Series (III)
	§8.9	#29, 31, 32, 33, 35
11/7M		Review for Chapter 8
11/8T		Test III

Chapter 10: Vectors and Geometry of Space

11/9W	§10.1	Three-Dimensional Coordinate Systems
	§10.1	#1, 5, 9, 19, 23, 27, 37, 41, 45, 49;
11/11F	§10.2	Vectors
	§10.2	#5, 12, 13, 19, 23, 25, 33, 37, 41, 43, 45, 47, 49, 51
11/14M	§10.3	The Dot Product
	§5.3	#1, 3, 13, 16, 17, 18, 19, 21, 24, 29, 33
11/15T	§10.4	The Cross Product
	§10.4	#1, 6, 13, 15, 17, 21
11/16W	§10.4	The Triple Product
	§10.4	#25, 27, 33, 41
11/18F	§10.5	Lines in Space
	§10.5	#1, 3, 9, 21, 23, 25, 27
11/21M		Thanksgivings and No Class
11/22T		Thanksgivings and No Class
11/23W		Thanksgivings and No Class
11/25F		Thanksgivings and No Class
11/28M	§10.5	Planes in Space
	§10.5	#1, 3, 5, 7, 9, 13
11/29T	§10.5	Planes in Space (II)
11/29T	§10.5	#17, 19, 22, 23, 29
11/30W		Review for Chapter 10
12/2F		Test IV
12/5M		Review for Final Exam

Final Examination

12/9F	12:00–3:00pm in Rm 455 Chemistry Building
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Grading Policy:

TEST I	150 points
TEST II	150 points
TEST III	150 points
TEST IV	150 points
Home Work	200 points
Final Exam.	200 points
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Total	1000 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%				

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary