

Math 2419-002

SPRING 2005

CALCULUS II

GREEN 3.420

11:00 -11:50 M.W.F.

INSTRUCTOR: F.R. ALLUM

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Text: CALCULUS by LARSON, HOSTETLER & EDWARDS, 7TH EDITION
STUDENT SOLUTION MANUAL AVAILABLE IN BOOKSTORE

You must be enrolled in problem section Math 2419-302,304, or 306.

Help is available. If difficulties arise, the following suggestions may help you:

- (I) Ask questions in your problem section
- (ii) Contact the problem section instructor during office hours
- (iii) Visit the MATH LAB (MC2.408; (972)883-6707)
- (iv) You may be eligible for assistance through Special Services
- (v) Contact the lecturer during office hours

Calculators. It is assumed that you will use a scientific calculator in this class. Calculators with either graphing or non-numeric displays are forbidden for all quizzes and exams.

Assignment Problems Assignments will be selected odd numbered problems and possibly problems from the Chapter Review. Answers to these problems are given at the back of your text book. Complete solutions to many of these problems may be found in the Solutions Manual which is available in the book store. You should work several problems of each type. Don't slavishly copy the solutions from the manual. Try to work them without reference to the solutions manual. When you have finished the problem or when you have exhausted all possibilities, then you should refer to the solutions manual to verify your answer or to obtain a hint in order to complete the solution. These problems will be discussed in the problem sections.

Problem Sections There are 14 problem sessions this semester. At 10 of these meetings, a quiz will be given, lasting about 15 minutes. Only 8 of these quiz grades will be used in the calculation of your final grade. The T.A. conducting each section will answer questions on the assignments, supply additional background material, discuss the previous quiz, comment on your examinations and may ask you to work problems. Occasionally, the problem section may be used to remind you of material covered in previous courses and deemed essential to the present course. At all times feel free to ask questions during these problem sections.

Note: Quizzes will be given in the problem solving sections; examinations in the class meetings.

Examinations All students are expected to take the examinations at the announced time. Cheating will NOT be tolerated. Students are required to inform the lecturer of suspected honor code violations. On all problems, you must show your work. No work, no credit. In general, there will be no make up exams or quizzes (see below).

Grade: Each quiz will be worth 25 points. A list of Math 2417 questions on differentiation and integration is available on my home page and is attached to this syllabus. The best 8 out of the 10 quizzes (expressed as a percentage) will be used for your quiz grade. Each of the three examinations will be worth 100 points and the comprehensive final will be worth 200 points. The best 3 out of the four quiz and examination grades plus the comprehensive final will be used to calculate your final grade. The final exam must be taken.

Example: Student J.T.M. has the following results:

Quiz grades 20, 15, 25, 18, 25, 19, 0, 10, 25, 21

Quiz grade $(168/200)100 = 84$ (drop 0,10)

Examination 1 75

Examination 2 60

Examination 3 72

Comprehensive final 171 (count as two exams)

Average = $(84+75+72+171) / 5 = 80.4$...(a grade of B-)

Grade Scale

96.7 - 100	A+	76.7 - 79.9	C+
93.4 - 96.6	A	73.4 - 76.6	C
90.0 - 93.3	A-	70.0 - 73.3	C-
86.7 - 89.9	B+	66.7 - 69.9	D+
83.4 - 86.6	B	63.4 - 66.6	D
80.0 - 83.3	B-	60.0 - 63.3	D-
0.0 - 59.9	F		

Important Dates

January 10	First class day
January 17	University Holiday
February 11	Examination I (subject to change)
March 07-12	Spring Break
March 14	See instructions in Spring 05 schedule regarding drop procedures after March 14,2005
March 21 (MONDAY)	Examination II (Subject to change)
April 15	Examination III(subject to change)
April 25	Last day of classes
April 29 (FRIDAY)	Comprehensive Final Exam at 7.00 PM

Note: The comprehensive final examination is scheduled for 7.00pm FRIDAY April 29, 2005.

**Either HH 2.402, HH on map or CN 1.112, CN on map
Details to be announced in class at the end of the semester.**

Note: The mid-term examinations will be given in
CN 1.112, CN on map at regular class time, 11.00am.
February 11, March 21(Monday), and April 15 , 2005

Grade of Incomplete "A grade of incomplete (X) may be assigned when a student's work has been satisfactory, but due to circumstances beyond the student's control, some part of the required work has not been completed. An X may not be assigned in lieu of an F or W. Allowing a student to "retake" an entire course during a subsequent semester, disregarding previous course performance, does not constitute an appropriate use of the grade of incomplete." In this course, an incomplete will only be considered if the student has a serious documentable, non-academic reason for missing more than one exam and not taking a make-up (e.g. illness in finals week).

Problem Solving Classes (subject to change)

#	CLASS	DATE: WEEK BEGINNING	DESCRIPTION
1		10 January	NO QUIZ THIS WEEK
2		17 January	Quiz 1
3		24 January	Quiz 2
4		31 January	Quiz 3
5		07 February	NO QUIZ THIS WEEK
6		14 February	Quiz 4
7		21 February	Quiz 5
8		28 February	Quiz 6
9		14 March	NO QUIZ THIS WEEK
10		21 March	Quiz 7
11		28 March	Quiz 8
12		04 April	Quiz 9
13		11 April	NO QUIZ THIS WEEK
14		18 April	Quiz 10

MID-TERM EXAMS AT REGULAR CLASS TIME, 11.00 am in CN 1.112

February 11, March 21(MONDAY), and April 15

FINAL EXAM 07:00 PM FRIDAY April 29, 2005.....

Location of final exam to be announced in class

MATH LAB HOURS

Monday-Thursday.....10:00 a.m. - 8:00 p.m.

Friday/Saturday.....10:00 a.m. - 2:00 p.m. Or by appointment (Ext. - 6707)

INTERESTING INTERNET ADDRESSES

(1) <http://www-groups.dcs.st-and.ac.uk/~history/Curves/Curves.html>

(2) <http://www.sisweb.com/math/tables.htm>

(3) <http://www.geocities.com/CapCanaveral/Launchpad/2426>

(4) <http://www.Ecalculus.org/>

(5) <http://www.math.temple.edu/~cow/>

- (6) <http://archives.math.utk.edu/utk.calculus/141toc.html>
- (7) <http://archives.math.utk.edu/visual.calculus/index.html>

HOME PAGE ADDRESS <http://www.utdallas.edu/~fallum/>

NOTE: Turn off all cell phones and pagers during lectures and exams.

MATH 2419 CALCULUS SYLLABUS **(Larson/Hostetler/Edwards)7th Edition**

7. Integration Techniques, L'Hôpital's Rule, and Improper Integrals

- 7.7 Indeterminate Forms and L'Hôpital's Rule
- 7.8 Improper Integrals

8. Infinite Series

- 8.1 Sequences
- 8.2 Series and Convergence
- 8.3 The Integral Test and P- Series
- 8.4 Comparisons of Series
- 8.5 Alternating Series
- 8.6 The Ratio and Root Tests
- 8.7 Taylor Polynomials and Approximations
- 8.8 Power Series
- 8.9 Representation of Functions by Power Series
- 8.10 Taylor and Maclaurin Series

9. Conics, Parametric Equations, and Polar Coordinates

- 9.2 Plane Curves and Parametric Equations
- 9.3 Parametric Equations and Calculus
- 9.4 Polar Coordinates and Polar Graphs
- 9.5 Area and Arc Length in Polar Coordinates

10. Vectors and the Geometry of Space

- 10.1 Vectors in the Plane
- 10.2 Space Coordinates and Vectors in Space
- 10.3 The Dot Product of Two Vectors
- 10.4 The Cross Product of Two Vectors in Space
- 10.5 Lines and Planes in Space
- 10.6 Surfaces in Space
- 10.7 Cylindrical and Spherical Coordinates

11. Vector-Valued Functions

- 11.1 Vector Valued Functions
- 11.2 Differentiation and Integration of Vector- Valued Functions
- 11.3 Velocity and Acceleration
- 11.4 Tangent Vectors and Normal Vectors
- 11.5 Arc Length and Curvature

12. Functions of Several Variables

- 12.1 Introduction to Functions of Several Variables.
- 12.2 Limits and Continuity
- 12.3 Partial Derivative
- 12.4 Differentials
- 12.5 Chain Rules for Functions of Several Variables
- 12.6 Directional Derivatives and Gradients
- 12.7 Tangent Planes and Normal Lines
- 12.8 Extrema of Functions of Two Variables
- 12.9 Applications of Extrema of Functions of Two Variables
- 12.10 Lagrange Multipliers

13. Multiple Integration

- 13.1 Iterated Integrals and Area in the Plane
- 13.2 Double Integrals and Volume
- 13.3 Change of Variables: Polar Coordinates
- 13.6 Triple Integrals and Applications
- 13.7 Triple Integrals in Cylindrical and Spherical Coordinates
- 13.8 Change of Variables: Jacobians

Appendix B Proofs of Selected Theorems

Appendix C Integration Tables

ASSIGNMENTS MATH 2419 SPRING 2005

LARSON, HOSTETLER EDWARDS. 7th Edition

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SECTION 11.4 page 817 1,3,17,19,21,23,25,27,31,37,39,49

SECTION 11.5 page 828 1,3,7,9,19,23,25,27,33,35

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SECTION 8.8 page 623: 1,3,5,7,9,11,13,15,17,19,21,23,27,29,35,37

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