Math 31 Section 11 Syllabus, Fall 2002

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Office Hours: M 2:00-3:00, TTh 11:00-12:00, or by appointment

Text: *Calculus, Eighth Edition*, by Varberg, Purcell, and Rigdon

Course Description: Math 31 is the first in a three part series on calculus. No prior knowledge of calculus is assumed. The following topics will be covered: limits and continuity, derivatives and their applications, and an introduction to integrals. The course focuses primarily on problem solving, however, some theory will be covered.

Course Material:
Chapter 2 Limits and Continuity (omit 2.1 – 2.3)
Chapter 3 The Derivative
Chapter 4 Applications of the Derivative (omit 4.5)
Chapter 5 The Integral
Chapter 11 Numerical Methods, Sections 2 & 3 only

Prerequisites: A score of 600 or higher on the SAT II, Math level IIC exam or a grade of C- or better in Math 30. If you are not sure about placement, see Elaine Dieter in Phillips 356.

Calculators: A scientific calculator is required, and one with graphing capabilities is recommended. TI-92s, TI-89s, and other "symbolic manipulators" are not allowed. Additionally, I reserve the right to disallow the use of calculators on part or all of any exam.

Homework: A list of suggested problems is attached to this syllabus. Homework assignments will be given on roughly a weekly basis. These assignments will be collected and selected problems graded. No late homework will be accepted. The final homework grade is worth one exam grade. The course will be extremely difficult to pass with out doing the homework assignments.

Exams and Grading: There will be three exams during the semester, each worth 100 points. Their tentative dates are as follows:
Exam 1 Friday, September 20
Exam 2 Friday, October 18
Exam 3 Friday, November 15

A standard 10 point scale will be used to determine grades (A: 100-90%, B: 89-80%, …). Make-up exams are not allowed. In case of a medical excuse of family emergency, with written documentation, a missed exam can be replaced by the final exam grade.

Final Exam: The comprehensive final exam will be given at **4:00 pm on Friday, Dec 6**. The make up final for those who obtain a Dean's excuse, is tentatively scheduled for 4:00 pm on Monday, Dec 9. This is a common exam taken by all sections of Math 31 at the same time, and under no circumstances will it or a make-up be given early. The final exam will be worth 200 points, making 600 the total number of points possible in the course. Uniform grading instructions for sections allow only minimal partial credit. Additionally, a certain level of performance on the final is required to earn a grade of C- or better in the course. Students receiving a grade below C- will not be allowed to enroll in Math 32. Finally, your course grade may not exceed your final exam grade by more than one letter grade.

Course Assistance: Students are strongly encouraged to meet with me during office hours. If you are unable to come during regular office hours, I will gladly work out a mutually agreeable time with you.
The Math Help Center is available to you, free of charge, Monday through Thursday, 3:30-7:30. It's located in Phillips 224. Additionally, the following website may prove helpful: www.math.unc.edu/UgradInfo/Courses

Honor Code: It is expected that each student will conduct him or herself with the guidelines of the Honor System. All work is to be done with the high level of honesty and integrity that this university demands.

MATH 31: CALCULUS BY VARBERG, PURCELL & RIGDON 8TH EDITION

2.4: 5, 6, 8, 9, 11, 13, 14, 15, 16, 19, 22, 29, 31, 32, 39, 41

2.5: 2, 5, 6

Additionally write the ε, δ definition of each of the following:

$$\lim_{x\to c} f(x) = L, \lim_{x\to c} f(x) - L = 0, \lim_{x\to 0} f(x) = L, \lim_{x\to c} f(x-c) = L$$

2.6: 13, 15, 18, 20, 23, 26, 28, 29, 34, 38, 43, 45, 46

Additionally, for problem 36, write the ε,δ-definition of each limit

2.7: 1,5,7, 9,17, 18

2.8: 3,7,9,11,12, 13-16, 19, 21, 23, 25, 33-36, 39, 40, 42, 45, 46, 49g,h

2.9: 4, 5, 9, 11, 12, 17,19, 20, 24,27, 30, 33, 36,37, 39, 40, 47

3.1: 3, 5, 7, 9, 10, 12, 13, 14, 16, 17, 18, 20, 22, 23, 25, 27

3.2: 3, 4, 9, 14, 15, 16, 19, 22, 37, 39, 40, 41

3.3: 3, 5, 8, 14, 15, 19, 22, 31, 32, 37, 40, 45, 46, 49, 50, 51, 52, 55, 58,59

3.4: 9-12, 15,16,19,21,23

3.5: 3, 4, 7, 10, 11, 12, 15, 17, 19, 22, 23, 28, 29, 32, 35, 36, 37, 42, 44, 46

3.6: 2, 3, 6, 7, 10, 11, 13, 14, 25, 26, 27, 28, 31, 32, 33

3.7: 4, 5, 8, 11, 13-16, 21, 22, 23, 28, 29, 30, 31, 32, 33, 34, 41

3.8: 2, 3, 7, 8, 9, 10, 11, 12, 14, 15, 17, 20, 21, 25, 28, 33, 36, 38, 41, 42, 49

3.9: 2, 3, 4, 6, 7, 12, 13, 14, 15, 16, 19, 27

3.10: 10, 11, 16, 17, 19, 20, 21, 22, 24, 26, 27, 28, 35

4.1: 4, 5, 7-12, 17, 22, 23, 24, 27, 28, 30, 31, 33, 35, 45, 49

4.2: 5, 7- 10, 15, 16, 17, 21, 22, 24, 27, 29, 30, 33, 34, 37, 39

4.3: 4, 5, 9, 12,14, 15, 17, 18, 19, 21, 23, 24, 30

4.4: 6, 7, 9, 11-13, 16, 17, 19, 23, 26, 27, 28, 31, 34

4.6: 8, 9, 11, 12, 14, 16, 19, 20, 29, 31, 32, 37, 39, 52, 53

4.7: 6-9, 19, 22, 24, 29-34, 44, 45, 51

5.1: 3, 4, 5, 7, 8, 15, 16, 21-26, 28-38

5.2: 1 - 10, 15, 16, 17, 18, 21 - 26, 28, 29, 30, 35, 36

5.3: 5, 6, 11, 12, 22, 27, 33, 34, 37, 41, 46

5.4: 4, 5, 7, 8, 12, 13, 19-21

5.5: 7, 8, 11, 12, 17, 18, 24

5.6: 1, 3, 11, 12, 13-20, 29, 45-50

5.7: 4, 5, 7, 8, 9, 10, 11, 12, 15, 16, 19, 20, 23, 24, 25, 26, 33, 34, 39, 41, 58.

5.8: 5-7, 10, 17, 19, 26, 29, 34, 37, 43, 46, 57, 65, 66

11.2: 3-6, 21, 22, 23

11.3: 1, 2, 5, 6, 9, 23, 24