

Mathematics 111
Calculus
Spring, 2002

Instructor: Mrs. Jan Smith
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Office Hours: 10:30 a.m. -- 2:30 p.m. MW
1:30 p.m. -- 3:30 p.m. T,Th
10:30 a.m. -- 12:00 p.m. Fri.
(Other Times by Appointment)

Textbook: Larson, Hostetler and Edwards, *Calculus of a Single Variable: Early Transcendental Functions*, Houghton Mifflin Co., 2nd Edition.

Course Content: Math 111 is the first semester of introductory calculus. Course content includes limits; continuity; the derivative; differentiation of algebraic, trigonometric, and the natural logarithmic and exponential functions; applications of derivatives; anti-derivatives; the definite integral; simple integration by substitution; and applications of the definite integral. Algebraic and transcendental functions are included early in this course. A calendar of topics is attached.

Course Goals: By the completion of this course, the student should have a basic conceptual understanding of the following: (1) limits and their relationship to the graph of a function, (2) the derivative and its relationship to the graph of a function and to the concept of "rate of change," and (3) the definite integral and its relationship to area and volume. The student should be able to calculate derivatives and to evaluate limits and integrals (both definite and indefinite). The primary purpose of this course is to provide a solid foundation for success in Mathematics 112 since both Mathematics 111 and 112 provide the student with a year of college calculus.

Gateway Exam: In order to pass this course, the student must pass an examination on derivatives. All 50 points will be given for a perfect paper. There will be four opportunities for the student to earn all 50 points. Beginning with the third attempt, if the student has only ONE mistake, the student may choose to get a score of 35 points and not retest. More than ONE mistake is not considered a passing grade. The Gateway Exam will be given on Tuesday, February 12. Retest dates will be announced later. Attached is an outline of the Gateway Exam.

Evaluation: The following written work will provide the basis of the student's evaluation:

Gateway Test	50 points
Test 1	50 points
Tests (3 @ 100 points)	300 points
Quizzes (10 @ 10 pts.)	100 points
Graphing Portfolio	100 points
Final Exam	200 points
Total	800 points

In general, letter grades will be determined as follows:

A:	720 or more points
B:	640-719 points
C:	560-639 points
D:	480 - 559 points
F:	Fewer than 480 points

Tests: The four tests will be given outside the regular class time, on Thursday mornings at 8:00 a.m. Test dates are given on page 3, with other important dates.

Review sessions will be scheduled outside of class as needed. Test locations will be announced.

Calculators: Calculators will not be needed on tests or quizzes unless specified.

Test Attendance: Students are expected to take tests at the scheduled times. Any conflicts or problems will be handled on an individual basis by the instructor. If a student has an excuse deemed legitimate by the instructor, arrangements will be made for the student to take a test prior to the testing time.

Religious Holiday Observance: Any conflicts between the course schedule and religious holy days are to be negotiated by the student with the instructor.

Quizzes: Quizzes will be given once or twice each week. The best ten will be selected. There is no provision for "making-up" a quiz.

Homework: Assignments of exercises from the text and from handouts will be distributed at the beginning of each segment of the course. These assignments may be modified at the instructor's discretion. The most important factor contributing to success in Math 111 is the regular (done at least every other day) and successful (exercises correctly done with a degree of confidence) completion of the exercises. Daily practice is recommended. The goal is for the student to be able to solve problems in good style, unaided by books, notes, tutors, or calculators.

Written Work: Express your thoughts in complete sentences. Use mathematical symbols wherever appropriate and make your work neat and legible. Pay attention to the way problems are solved in class and in the textbook.

Tutoring/Help Sessions: Natalie Henderson is the SI leader for Math 111 this semester. She will schedule study sessions for students. Student tutors are available in the evenings in the Gregory Room of the JRC; a schedule will be provided early in the semester.

Class Attendance: The student is responsible for the course material discussed in class. Therefore, the student is expected to attend all classes. Attendance will be taken.

Some Important Dates:	January 21	Holiday
	January 23	Last Drop/Add Day
	February 12	Gateway Exam
	February 20	Last Day to Drop with W
	March 11-15	Spring Break
	April 30	Last Class Day
	May 2-8	Final Exams

Tentative Test Dates:	Thurs., January 31	Test 1
	Thurs., February 21	Test 2
	Thurs., March 28	Test 3
	Thurs., April 18	Test 4

THE HONOR CODE OF OXFORD COLLEGE APPLIES TO ALL WORK SUBMITTED FOR CREDIT IN THIS COURSE. WHEN YOU WRITE YOUR NAME ON SUCH WORK, YOU ARE PLEDGING THAT THE WORK WAS DONE IN ACCORDANCE WITH THE RULES STIPULATED ON THE WORK OR IN THIS SYLLABUS.

Mathematics 111
Calendar of Topics
Spring, 2002

Wednesday, January 16	Intro. to Cal. [1.1], Limits [1.2]
Friday, January 18	Limits [1.3]
Wednesday, January 23	Continuity [1.4]
Friday, January 25	Intermediate Value Theorem [1.5]
Monday, January 28	Def. of derivative, tangent line problem, Differentiability [2.1]
Wednesday, January 30	Basic Rules of Differentiation [2.2]
Friday, February 1	Product & Quotient Rules; Higher Order Derivatives [2.3]
Monday, February 4	Chain Rule, Derivative of the Natural Log Function [2.4]
Wednesday, February 6	Review of Differentiation
Friday, February 8	Implicit Differentiation [2.5]
Monday, February 11	Derivative of Arcsine and Arctangent Functions [2.6]
Wednesday, February 13	Related Rates [2.7]
Friday, February 15	Related Rates (continued)
Monday, February 18	Review
Wednesday, February 20	Extrema on an Interval [3.1]; Mean Value Theorem [3.2]
Friday, February 22	Graphing Concepts [3.3, 3.4] (Polynomial Functions)
Monday, February 25	Graphing (continued)
Wednesday, February 27	Infinite Limits [1.6]; Limits at Infinity [3.5]
Friday, March 1	Graphs of Rational Functions [3.6]
Monday, March 4	Graphs with Vertical Tangents & Other types of graphs [3.6]
Wednesday, March 6	Graphing (continued)
Friday, March 8	Graphing (continued)
Monday, March 18	Optimization [3.7]
Wednesday, March 20	Optimization (continued)
Friday, March 22	Antiderivatives [4.1]
Monday, March 25	Antiderivatives (continued)
Wednesday, March 27	Sums and Sigma Notation [4.2] & Induction
Friday, March 29	Induction (continued)
Monday, April 1	Definite Integral, Area [4.3]
Wednesday, April 3	Fundamental Theorem of Calculus [4.4]
Friday, April 5	Integration by Substitution [4.5]
Monday, April 8	More Substitution [4.7, 4.8]
Wednesday, April 10	Introduction to Differential Equations [5.1, 5.2]
Friday, April 12	Differential Equations (continued)
Monday, April 15	Area between curves [6.1]
Wednesday, April 17	Volumes of Revolution: Disk Method [6.2]
Friday, April 19	Volume (continued)
Monday, April 22	Volumes of Revolution: Shell Method [6.3]
Wednesday, April 24	Volume (continued)
Friday, April 26	Review
Monday, April 29	Review