

Mathematics 111
Fall, 1993

Textbook: Varberg and Purcell, Calculus, 6th edition

Instructor: Dr. Evelyn C. Bailey, Dr. William P. McKibben

Office Hours: To be given by your instructor

Course Content: Mathematics 111 is the first semester of freshman calculus. This fall semester course includes a review of algebraic and transcendental functions, with limits of these functions; and the derivative with applications and introduction to integration with applications using algebraic and trigonometric functions. Specific topics (by days) are listed in a later section of this syllabus.

Grading: The final course grade will be determined as follows:

Major tests (5 @ 100 points)	500 points
Quizzes (best 8 @ 15 points)	120 points
Computer Project	100 points
Laboratory Test	100 points
Final Exam	<u>200 points</u>
	1020 points possible

In general:

- A: 900 points and above
- B: 800-899 points
- C: 700-799 points
- D: 600-699 points
- F: below 600 points

The instructor will use "+" (plus) or "-" (minus) within the appropriate grade categories; i.e., grades of A-, B+, B-, C+, C-, D+ will be used for sums of points near the above given cut-off total points.

Major Tests: The five major tests will be given at 7:45 a.m. on the following mornings: September 7, September 28, October 19, November 9, November 23. In general, calculators are not allowed on tests. Exceptions may be made for tests including word problems. You will be told in advance if calculators will be permitted.

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Homework: Assignments from your text will be given at the beginning of each testing period. These assignments will not be collected but are for your benefit. Additional problems and information handouts will be provided as needed, especially for the laboratory sessions. It is important that you complete assignments as they are assigned and that you not wait until a few days prior to a test to do homework. In general you need to spend 2 hours outside for every hour of scheduled instruction.

Class Attendance: You are expected to attend all classes since you are responsible for work covered in class. An inordinate amount of absences will be handled in accordance with school policies.

YOU ARE EXPECTED TO TAKE TESTS AT THE SCHEDULED TIMES. ANY CONFLICTS OR PROBLEMS WILL BE HANDLED ON AN INDIVIDUAL BASIS. IF THE EXCUSE IS CONSIDERED LEGITIMATE BY YOUR INSTRUCTOR, ARRANGEMENTS WILL BE MADE TO TAKE A TEST PRIOR TO THE TESTING TIME. EMERGENCIES WILL BE HANDLED ON AN INDIVIDUAL BASIS.

HONOR CODE: THE HONOR CODE OF OXFORD COLLEGE APPLIES TO ALL WORK SUBMITTED FOR CREDIT IN THIS COURSE. ALL SUCH WORK WILL BE PLEDGED TO BE YOURS AND YOURS ALONE. THIS IS THE CASE WHEN YOU PLACE YOUR NAME ON WORK SUBMITTED. THE HONOR CODE APPLIES TO ALL TESTS, QUIZZES AND THE COMPUTER PROJECT.

Summary of Important Dates:

September 6	Labor Day
September 7	Test 1
September 28	Test 2
October 7, 8	Midsemester break
October 19	Test 3
November 5	Computer Project Due
November 9	Test 4
November 16	Laboratory Test
November 23	Test 5
November 24-28	Thanksgiving Break
December 3	Last class day

Quizzes: All quizzes are announced and "take home"; however, you must be present in class to receive your quiz. You must work each quiz at one sitting and use only authorized materials. ~~In past instances, students have used a pencil, a ruler, and you will be allowed to use notes, a calculator.~~ Quizzes are due at class time on the class day following your receipt of them. Each quiz is worth 15 points and the sum of points from the best eight quizzes will be used in determining your grade.

Computer Project: The computer laboratory facilities in Pierce Hall has the package Derive on the IBM computers. An information booklet pertaining to graphing using the computer software Derive is available in the laboratory along with computer aides who understand Derive.

You are to prepare a portfolio of computer print-outs showing 10 different non-piecewise defined functions that have distinctly different shapes. Identify each function and all important characteristics. Use algebraic and trigonometric functions and combinations of these functions. You may get help from the computer aides on the use of the computer, but you must create your own functions and you must not share functions. Due class time on **Friday, November 5.**

Laboratory Sessions: You are required to attend the scheduled laboratory sessions, either on Wednesday or Thursday afternoons, depending on your scheduled time. These sessions are used to discuss the transcendental functions needed in Calculus I and II and to review concepts covered in the classroom. Special materials have been prepared to aid your study of trigonometric functions and of logarithmic and exponential functions. A separate syllabus for laboratory will be issued. The laboratory test on transcendental functions will be given at 7:45 on **Tuesday, November 16.**

Tutoring/Help Sessions: Student tutors will be available Monday through Thursday from 3:00 to 5:00 (outside the mathematics offices on the first floor of Seney Hall) and from 6:00 to 8:00 (in room 201 of Language Hall). There may be other special times which will be announced later. Tutoring will begin on August 30 and continue while school is in session until December 2.

A few help sessions will be scheduled throughout the semester. These are optional and generally will be held at 8:15 on Tuesday or Thursday mornings or at 2:00 on the Friday afternoons prior to a Tuesday morning test. Times for help sessions will be announced in class.

Topics by Dates:

Monday, August 23	Functions (2.1, 2.2, 2.3)
Wednesday, August 25	Limits (2.4, 2.5)
Friday, August 27	Continuity (2.7)
Monday, August 30	Intermediate Value Theorem and review
Wednesday, September 1	Derivative (3.1, 3.2)
Friday, September 3	Review
Monday, September 6	Labor Day
Tuesday, September 7	Test 1

Wednesday, September 8	Rules of Differentiation (3.3)
Friday, September 10	Derivatives of Sines and Cosines (3.4)
Monday, September 13	Review rules of differentiation
Wednesday, September 15	Chain Rule (3.5)
Friday, September 17	Leibniz Notation, Higher Order (3.6, 3.7)
Monday, September 20	Implicit differentiation (3.8)
Wednesday, September 22	Related Rates (3.9)
Friday, September 24	Related Rates (continued)
Monday, September 27	Review
Tuesday, September 28	Test 2

Wednesday, September 29	Optimization Problems (parts of 4.1, 4.4)
Friday, October 1	Optimization Problems (continued)
Monday, October 4	Economics (4.5)
Wednesday, October 6	Graphing polynomials (parts of chp. 4)
Friday, October 8	Midsemester break
Monday, October 11	Limits of infinity, Infinite Limits (4.6)
Wednesday, October 13	Graphing rational functions (4.7)
Friday, October 15	Graphing vertical tangents (4.7)
Monday, October 18	Review
Tuesday, October 19	Test 3

Wednesday, October 20	Antiderivatives (5.1)
Friday, October 22	Introduction to Differential Equations (5.2)
Monday, October 25	Differential Equations (continued)
Wednesday, October 27	Sums and Sigma Notation (5.3)
Friday, October 29	Sums and Sigma Notation (continued)

Monday, November 1	Area, Definite Integral, Fundamental
Wednesday, November 3	Theorem of Calculus (5.4, 5.6)
Friday, November 5	Mean Value Theorem for Integrals
	Substitution (5.8)
	Computer Project Due
Monday, November 8	Review
Tuesday, November 9	Test 4

Wednesday, November 10	Area (6.1)
Friday, November 12	Volume: Disk (6.2)
Monday, November 15	Volume: Shell (6.3)
Tuesday, November 16	Laboratory Test
	(Transcendental Functions)
Wednesday, November 17	Review of area and volume
Friday, November 19	Acceleration, velocity, speed
Monday, November 22	Review
Tuesday, November 23	Test 5

Wednesday, November 24 - Sunday, November 28 Thanksgiving break	

Monday, November 29	Limits revisited with all
	functions studied
Wednesday, December 1	Review for final exam
Friday, December 3	Review for final exam