Mathematics 112S
Fall, 1993

Textbook: Varberg and Purcell, Calculus, 6th Edition

Instructor: William P. McKibben
Office: Seney 303
Phone: 4-8333

Regular Office Hours: Mondays & Tuesdays: 2:30 - 4:30 p.m.
Wednesdays & Fridays: 11:00 - 12:00 p.m.
Wednesdays & Thursdays: 3:30 - 4:30 p.m.

Course Content: Math 112S completes the first year of calculus for entering students with sufficient background in calculus to study effectively the topics normally taught in Math 112. Course content includes review of functions, limits, derivatives and integrals; methods of integration; L'Hospital's Rule and improper integrals; polar coordinates; and infinite series, including power series. The attached calendar gives a more detailed description of course content.

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

Major tests (4 @ 100 points)	400 points
Quizzes (best 10 @ 20 points)	200 points
Computer Projects	120 points
Paper	100 points
Final Exam	200 points
	1020 points

In general, letter grades will be determined as follows:

A: 900 or more points
B: 800-899 points
C: 700-799 points
D: 600-699 points
F: fewer than 600 points

Grades of A-, B+, B-, C+, C-, D+ may be assigned for sums of points near the above cut-offs in total points.

Major Tests: Four tests will be given as follows:

Test 1: Tuesday, September 14 at 7:45 a.m.
Test 2: Tuesday, October 5 at 7:45 a.m.
Test 3: Thursday, October 28 at 7:45 a.m.
Test 4: Tuesday, November16 at 7:45 a.m.

Students are expected to take tests at the scheduled times. Any conflicts or problems will be handled on an individual basis. For reasons deemed legitimate by your professor arrangements may be made for a student to take at test prior to the testing time. Emergencies will be handled on an individual basis. *Unless otherwise stated, calculators are not permitted on tests.*

Quizzes: All quizzes are announced and "take home." A student must be present in class to receive a quiz. Quizzes must be done during one sitting and use only the reference sheet provided for the course. Quizzes are due at class time on the class day following. Each quiz will be graded on a basis of 20 points.

Computer Projects: You are to use the program DERIVE in the IBM computer laboratory (Pierce 122) to prepare two portfolios of graphs.
The first portfolio, due on September 24, is to consist of eight (8) graphs illustrating features of graphs of functions y=f(x) and must include algebraic, trigonometric, logarithmic and exponential functions. The functions graphed are to be stated and all important features of each graph are to be identified.
The second portfolio, due on November 5, is to consist of four (4) polar graphs with equation given and features identified.

Paper: This assignment, due on November 22, will require a typed paper between four (4) and six (6) pages in length. This paper will necessitate research and it is expected that at least five resources will be used. Details regarding this paper will be given to you within the next three weeks.

Honor Code: The Honor Code of Oxford College applies to all work submitted for credit in this course, and all such work will be pledged to be that and only that of the individual student submitting the work.

Homework: Homework assignments are for the student's benefit and will not be collected. It is important, however, that the student complete most of the problems assigned.

Tutoring: Beginning August 31, student tutors will be available from 6:00 p.m. to 8:00 p.m., Monday through Thursday, in Room 201 of Language Hall. In addition, student tutors are available from 3:00 to 5:00 p.m., Monday through Thursday, in Seney 115.

Help Sessions: Help sessions will be scheduled at appropriate times during the semester.

Class Attendance: The student is responsible for the course material discussed in class. Therefore, the student is expected to attend all classes. An inordinate number of absences will be handled in accordance with the College's policies.

Mathematics 112S
Fall 1993
Calendar of Topics

Mon., Aug. 23 - Review: functions and graphs; inverse functions
Wed., Aug. 25 [7.2]; limits; derivative, applications of the
Fri., Aug. 27 derivative, differentiation; integrals, definite and indefinite, and applications

Mon., Aug. 30 - The natural logarithmic function and properties [7.1]; the natural exponential function and properties [7.3]; logarithmic differentiation

Wed., Sept. 1 - Inverse trigonometric functions and their derivatives; associated integrals [7.6, 7.7]

Fri., Sept. 3 - Indeterminate forms; L'hospital's Rule [9.1, 9.2]

Mon., Sept. 6 - Labor Day (no class meeting)

Wed., Sept. 8 - Review calculus graphing principles; graphs of exponential and logarithmic functions

Fri., Sept. 10 - Review
Mon., Sept. 13

Tues., Sept. 14 - TEST 1 at 7:45 a.m.

Wed., Sept. 15 - Techniques of integration: substitutions [8.1] and trigonometric integrals [8.2]

Fri., Sept. 17 - Techniques of integration: trigonometric substitutions [8.3]

Mon., Sept. 20- Techniques of integration: integration by parts [8.4]

Wed., Sept. 22- Techniques of integration: partial fractions [8.5]

Fri., Sept. 24 - Review: techniques of integration
First Computer Project Due

Mon., Sept. 27- Improper integrals [9.3, 9.4]
Wed., Sept. 29

Fri., Oct. 1 - Review
Mon., Oct. 4

Tues., Oct. 5 - TEST 2 at 7:45 a.m.

Wed., Oct. 6 - Polar coordinates and graphs of polar equations [12.6, 12.7]

Fri., Oct. 8 - Fall Break (no class)

Mon., Oct. 11 - Area with polar coordinates [12.8]

Wed., Oct. 13 - Infinite sequences [11.1]

Fri., Oct. 15 - Introduction to infinite series [11.2]
Mon., Oct. 18

Wed., Oct. 20 - Tests of convergence for infinite series with
Fri., Oct. 22 positive terms [11.3, 11.4]

Mon., Oct. 25 - Review
Wed., Oct. 27

Thurs., Oct. 28 - TEST 3 at 2:15 p.m.

Fri., Oct. 29 - Alternating series; absolute convergence [11.5]

Mon., Nov. 1 - Power series
Wed., Nov. 3

Fri., Nov. 5 - *Second Computer Project due (11/5)*
Mon., Nov. 8 Operations with power series; Taylor and
Wed., Nov. 10 Maclaurin series

Fri., Nov. 12 - Review
Mon., Nov. 15

Tues., Nov. 16- TEST 4 at 7:45

Wed., Nov. 17- Some first-order differential equations;
Fri., Nov. 19 exponential growth and decay [7.5]
Mon., Nov. 22 *Paper Due (11/22)*

Wed., Nov. 24 - Thanksgiving Travel Day (no class)

Fri., Nov. 26 - Thanksgiving Break (no class)

Mon., Nov. 29- Review Differential Equations and Integration

Wed., Dec. 1 - Review of Course

Fri., Dec. 3 - Review of Course-Last Class Day

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Tuesday, December 7 - FINAL EXAMINATION
at 9:00 a.m.