Calculus II
Summer Session 3, 2009
MATH 211.02 (4 credits), MTWTF, 1:00PM-3:00PM, Wickersham 218

Prerequisites: A grade of C- or better in MATH 161 (*Calculus I*) or MATH 163 (*Honors Calculus I*).

Instructor: Dr. Buchanan
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    Office Hours: 3:05PM-4:00PM (M–F) or by appointment
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    Course URL: http://banach.millersville.edu/~bob/math211

Textbook: *Calculus*, 3rd edition, Robert T. Smith and Roland B. Minton, McGraw-Hill Company, New York (2007), ISBN 0-07-286953-4.

Objectives: MATH 211 is a continuation and extension of the topics and concepts introduced in MATH 161 *Calculus I*. Major emphasis is on the transcendental functions, techniques of integration, sequences and series, and parametric equations. The student will:

- Apply the definite integral to finding plane areas, volumes and surface areas of solids, and lengths of curves, and to selected problems in physics.
- Learn to differentiate and integrate inverse trigonometric functions.
- Learn standard techniques of integration: Integration by parts, integration of powers of trigonometric functions, trigonometric substitution, partial fractions, and selected special substitutions.
- Evaluate improper integrals of both kinds, and use l'Hôpital's rule.
- Learn about sequences and infinite series, and apply the standard tests for convergence of series (to numerical series and to power series).
- Construct Taylor and Maclaurin series for functions and apply them in calculations.
- Graph curves in polar coordinates, recognize standard forms in polar coordinates, and find areas in polar coordinates by integration.
- Describe curves in parametric form and apply the techniques of calculus to parametric curves.

Course Contents: Topics to be covered are listed below. If time permits, other topics may be covered as well.

- Applications of the definite integral
- Exponentials, logarithms and other Transcendental functions

- Integration Techniques
- Infinite series
- Parametric equations and polar coordinates

Attendance: Students are expected to attend all class meetings. If you cannot regularly attend class due to a time conflict with another class or activity, you should wait until a later semester to take this course. If you must be absent from class you are expected to complete class requirements (*e.g.* homework assignments) prior to the absence. If you know you will be absent on the day of a test, you must notify me **before** the time the test is scheduled in order to receive permission to take a make-up test. Students who miss a test should provide a valid excuse, otherwise you will not be allowed to make up the test. There will be no final exam exemptions.

Homework: Students are expected to do their homework and participate in class. Students should expect to spend a minimum of three hours outside of class on homework and review for every hour spent in class. Homework exercises help students review and reinforce concepts covered in class. The textbook exercises are arranged in an increasing level of difficulty. Working only the low-numbered exercises will not prepare a student sufficiently for the test and final examination exercises. All assigned homework exercises must be worked until successful completion.

Assessment of students' progress on and mastery of homework will be conducted by weekly in-class multiple choice quizzes. The quiz problems will be closely modeled on the preceding days' homework assignments. The quizzes are tentatively scheduled for the following dates.

- Friday, July 24, 2009
- Monday, August 3, 2009
- Monday, August 10, 2009
- Wednesday, August 18, 2009

There will be no makeups for missed quizzes.

Tests: There will be three tests and a comprehensive final examination. The tests are scheduled as follows.

- Tuesday, July 28, 2009
- Wednesday, August 5, 2009
- Thursday, August 13, 2009

The final examination is scheduled for 1:00–3:00PM on Thursday, August 20, 2009.

I will not "curve" test, quiz, or exam grades.

Grades: Course grade will be calculated as follows.

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\begin{array}{ll}
\text{Tests} & 19\% \text{ each} \\
\text{Quizzes} & 20\% \\
\text{Exam} & 23\%
\end{array}
$$

Tests and the final examination will be graded individually on a 100-point scale. If a student believes that an error was made in the grading of a test, the student should explain *in writing* why they believe an error exists and submit the graded material and the explanation of the possible error to me within 2 class periods of the graded test or homework being returned to the student. In no cases will adjustments to grades of less than 3 points be made.

I keep a record of students' test, quiz, and exam scores. Students should also keep a record of graded assignments, tests, and other materials. As an example of the calculation of the numerical course grade, suppose a student's three test grades were 87, 78, and 65 (out of a maximum of 100 points on each test), the student's final examination grade was 71 (again, out of a maximum of 100), and the student's four quiz grades were 2/2, 3/4, 2/4, and 2/3. This student's test and quiz average are 76.7 and 0.729 respectively. The student's numerical course grade is then

$$(76.7)(0.57) + (0.729)(20) + (71)(0.23) = 74.6 \approx 75.$$

The course letter grades will be calculated as follows. I will not "curve" course grades.

90-92	A−	93-100	A		
80-82	B−	83-86	B	87-89	B+
70-72	C−	73-76	C	77-79	C+
60-62	D−	63-66	D	67-69	D+
		0-59	F		

Calculator Policy: Frequently examples, homework exercises, quizzes, and tests will make use of a graphing calculator. The Department of Mathematics recommends the TI-83/84/85/86 model calculator for students in elementary calculus. The TI-89/92 or any other calculator with symbolic or computer algebra capabilities is not permitted to be used in this course.

Course Repeat Policy: An undergraduate student may not take an undergraduate course of record more than three times. A course of record is defined as a course in which a student receives a grade of A, B, C, D, (including + and −) F, U, Z or W. The academic department offering a course may drop a student from a course if the student attempts to take a course more than three times.[1]

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[1] Memorandum to mathematics faculty from Dr. Charles G. Denlinger, Assistant Chair, Department of Mathematics, August 30, 2004.

Inclement Weather Policy: If we should miss a class day due to a school closing because of weather, any activities planned for that missed day will take place the next time the class meets. For example, if a test is scheduled for a day that class is canceled on account of snow, the test will be given the next time the class meets.

Final Word: Math is not a spectator sport. What you learn from this course and your final grade depend mainly on the amount of work you put forth. Daily contact with the material through homework assignments and review of notes taken during lectures is extremely important. Organizing and conducting regular study sessions with other students in this class will help you to understand the material better.

No one can guarantee you success in this course. Your responsibilities and the instructor's expectation are outlined above. There will be no second chances, "do-overs", or extra credit assignments.