

**Calculus I**  
**Fall 2010**

**MATH 161.02 (4 credits), MTu\_ThF, 09:00AM-09:50AM, Wickersham 201**

**Prerequisites:** A grade of C- or better in MATH 160 (*Precalculus*) or MATH 161 Placement.

**Instructor:** Dr. Buchanan

Office: Wickersham 217-1, Phone: 872-3659, FAX: 871-2320

Office Hours: 1:00PM-2:00PM (M\_W\_F), 2:30-3:30PM (Tu\_Th) or by appointment

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Course URL: <http://banach.millersville.edu/~bob/math161>

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

**Objectives:** MATH 161 introduces the concepts and techniques of calculus, beginning with limits. Major emphasis is on the theory and applications of continuity, derivatives, antiderivatives, and the definite integral. The calculus of the trigonometric, exponential, and logarithmic functions is also included. Upon successful completion of this course a student will have learned to

- find the limits of elementary, rational, and some transcendental functions,
- differentiate elementary, rational, composed, and some transcendental functions,
- apply derivatives to situations involving rates of change, velocity, and acceleration,
- apply derivatives in situations requiring the optimization of a quantity,
- integrate elementary, rational, composed, and some transcendental functions.

Overall students will gain an appreciation for the great intellectual achievement that is the development of the calculus.

**Course Contents:** If time permits other topics may be covered as well.

- Limits and continuity (Chap. 1)
- Differentiation (Chap. 2)
- Applications of differentiation (Chap. 3)
- Integration (Chap. 4)
- Separable differential equations and applications (Sec. 7.1 and 7.2)

**Attendance:** Students are expected to attend all class meetings. If you know beforehand that you will be absent from class on the day an assignment is due, you must complete and hand in the assignment prior to the absence. If you are unexpectedly absent the

day that an assignment is due you must hand in the assignment at the beginning of the class hour on the first day that you return to class. 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 schedule 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. 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 generally 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. In addition to homework problems which will be assigned nearly every class meeting from the textbook, there will be periodic (most likely weekly) graded homework assignments administered through the **Mathzone** website. Deadlines for completing the Mathzone assignments will be announced several days in advance. Students should begin to work on these assignments as soon as possible in order to avoid delays which may result from computer and internet availability problems. Every student will be allowed one, and only one, 48-hour extension to the deadline of one Mathzone assignment. If you need the deadline extension, you must request it before the deadline. Requests made after the deadlines will not be granted.

Each student will need to enroll by September 3, 2010 in the appropriate section of this course at the Mathzone website (<http://www.mathzone.com>). The website will prompt you for the section code: 469-CF-A39. If you have difficulty registering at the website, contact me immediately.

**Tests:** There will be four tests and a comprehensive final examination.

- Test 1, Thursday, September 16, 2010
- Test 2, Friday, October 8, 2010
- Test 3, Thursday, November 4, 2010
- Test 4, Friday, December 3, 2010

The final exam is scheduled for Wednesday, December 15, 2010, 08:00AM–10:00AM. I will not “curve” test, homework, or exam grades.

**Grades:** Course grade will be calculated as follows.

|          |          |
|----------|----------|
| Tests    | 15% each |
| Homework | 10%      |
| Exam     | 30%      |

Tests and the final examination will be graded individually on a 100-point scale. Graded homework will generally consist of several questions similar to exercises you will have recently seen in the textbook. I keep a record of students' test, homework, 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 four test grades were 87, 78, 65, and 70 (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 successfully completed 80% of the graded homework assignments. This student's test average is 75. The student's numerical course grade is then

$$(75)(0.60) + (0.80)(10) + (71)(0.30) = 74.3 \approx 75.$$

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, 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. If you have a TI-89/92 or any other calculator with a built-in computer algebra system, you must make arrangements to borrow a permitted calculator for the tests and final examination.

**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.<sup>1</sup>

The last day to withdraw from a course (and receive the W grade) is November 5, 2010.

**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.

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<sup>1</sup>Memorandum to mathematics faculty from Dr. Charles G. Denlinger, Assistant Chair, Department of Mathematics, August 30, 2004.

**Cell Phones:** Silence (or better yet, turn off) all cellular telephones upon entering the classroom. Leaving class to initiate or receive a telephone call will not be tolerated and students doing so will not be re-admitted to the classroom until the following class meeting. Texting or tweeting during class interferes with the learning process. Students distracted by their cell phones are not engaged in class and will find, over the course of the semester, that learning and course grade will suffer.

**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.