

Department of Mathematical Sciences  
WORCESTER POLYTECHNIC INSTITUTE  
MA 3831, Advanced Calculus, Term C01,  
web page for the course: <http://www.wpi.edu/~bogdand/acalc/>

## Advanced Calculus SYLLABUS

**Instructor:** Bogdan Doytchinov, e-mail: bogdand@wpi.edu  
Office: SH105D, Office hours: Mo 11:00-11:50am, Tu 2:00-3:50pm, Th 10:00-10:50am

**TEXT.** Thomson, Bruckner, Bruckner *Elementary Real Analysis*, Prentice Hall.

**Remark:** Be not deceived by the title of the book. This is a serious and very advanced text.

**COURSE CONTENTS.** Advanced Calculus is a two-part course which has the purpose to give a rigorous presentation of the important concepts of classical real analysis.

The two-course sequence consists of this course, MA 3831, and its sequel, MA 3832, to be delivered in term D01. The topics covered in the two-course sequence include (but are not limited to):

- basic set theory,
- elementary topology of Euclidean spaces,
- limits and continuity,
- differentiation,
- Reimann-Stieltjes integration,
- infinite series,
- sequences of functions,
- topics in multivariate calculus.

**LECTURES.** There are four lectures per week. There are no conferences, labs or MASH sessions. You are expected to spend about 15 hours per week on the course. This means that more than  $2/3$  of the learning for this course will take place outside of class. A serious attitude and good working habits are paramount.

You are expected to attend all lectures. If you miss a class, it is your responsibility to make a copy of the classnotes from another student and make sure you learn what you have missed.

To encourage attendance, on many of the lectures there will be a surprize 3-minute mini-quiz which will be graded out of 2 points. These mini-quizzes will account for 10% of your grade.

**HOMEWORK.** Homework will be assigned about once a week and will be due a week from the day it is assigned. It is an important part of the course. Many of the homework problems

will not be a rehashing of class examples, but will add to the material studied, stretch your minds, and expand your horizons. Homework will account for 20

**GRADING POLICY.** There will be four in-class tests (25 minutes each) and a Final exam (50 minutes, during the regular class period on Thursday, March 1). The lowest of the four test scores will be dropped.

All exams are closed-book exams. No books, notes, or calculators will be allowed during the four tests and the final exam.

Tentative schedule for the exams:

Test 1	Monday, January 22
Test 2	Friday, February 2
Test 3	Tuesday, February 13
Test 4	Monday, February 26
Final Exam	Thursday, March 1

The grade will be calculated in the following way:

40% of the grade come from the three best Tests,

30% of the grade come from the Final Exam,

20% of the grade come from the Homework,

10% of the grade come from the in-class activities (mini-quizzes).

These scores are combined to give a final number of points, between 0 and 100. Point ranges for the final grades are approximately given by:

A: 100-90

B: 89-80

C: 79-65

These cutoffs might go down a bit due to curving, but not by much. They will not go up. (In other words, 90 points guarantee you an A, etc).

No makeup tests will be given - *ever*. If you miss a test, that will be the one dropped when computing the semester score. Anybody caught cheating on any of the tests or exams will be assigned a failing grade.