

MATH 3001–REAL ANALYSIS

Fall 2009

Instructor:

Paul Mezo
4217 Herzberg
Tel: 520-2600 ext. 2156
e-mail: mezo@math.carleton.ca

Prerequisites: MATH 2000 or permission of the School of Mathematics and Statistics.

Lectures: Wednesdays and Fridays 13:05-14:25 TB 217.

Tutorials: Fridays 8:35-9:25 TB 213. There will be no tutorial on September 11th and 18th.

Office hours: Mondays 13:30-14:30.

Webpage: <http://mathstat.carleton.ca/%7Emezo/math3001.html>

Course description: Metric spaces and their topologies, continuous maps, completeness, compactness, connectedness, introduction to Banach spaces.

Suggested text: *Introduction to topology*, third edition, by Bert Mendelson.

Grading scheme:

- Students must achieve a grade of at least 40% in their term work in order to pass the course.
- The grading scheme will not be changed.

Quizzes	20%
Test	20%
Final exam	60%

Quizzes: 30-minute quizzes will take place at the beginning of tutorials scheduled on September 25th, October 2nd, 16th, 30th, and November 6th, 13th and 20th. Each quiz will be based on problems assigned on the course webpage (at least) a week earlier. Only the best six of the seven quizzes will count towards the final grade.

Test: There will be an 80-minute test during the lecture time of Friday, October 23rd.

Exam: The term will conclude with a three-hour exam scheduled during the usual final examination period. Please note that the exam date cannot be changed by the instructor.

Term course outline:

Week	Topics
1	real numbers, countability
2	metric spaces, normed vector spaces
3	metric spaces, normed vector spaces
4	continuity
5	limits, modes of convergence
6	basic topology
7	connectedness, mid-term test
8	connectedness, compactness
9	compactness
10	completeness
11	the Baire Category Theorem
12	Weierstrass approximation
13	additional topics

Absences: Accommodations for any quizzes or tests missed due to temporary illness will not be made without an original, official and signed medical note.

Academic accommodations: You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Pregnancy obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website: http://carleton.ca/equity/accommodation/student_guide.htm

Religious obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the Equity Services website: http://carleton.ca/equity/accommodation/student_guide.htm

Students with disabilities requiring academic accommodations in this

course must register with the Paul Menton Centre for Students with Disabilities (PMC) for a formal evaluation of disability-related needs. Documented disabilities could include but are not limited to mobility/physical impairments, specific Learning Disabilities (LD), psychiatric/psychological disabilities, sensory disabilities, Attention Deficit Hyperactivity Disorder (ADHD), and chronic medical conditions. Registered PMC students are required to contact the PMC, 613-520-6608, every term to ensure that I receive your Letter of Accommodation, no later than two weeks before the first assignment is due or the first in-class test/midterm requiring accommodations. If you only require accommodations for your formally scheduled exam(s) in this course, please submit your request for accommodations to PMC by the last official day to withdraw from classes in each term. For more details visit the PMC website: http://www.carleton.ca/pmc/students/acad_accom.html