

# Course Information: Introduction to Mathematical Analysis I : MATH 301 Section 0101 Fall 2008

August 27, 2008

<b>Lectures</b>	MWF - 11:00-12:05 PM, MP 102
<b>Course web site</b>	<a href="http://www.math.umbc.edu/~muruhan/spring08-301">http://www.math.umbc.edu/~muruhan/spring08-301</a>
<b>Instructor</b>	Dr Muruhan Rathinam
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<b>Office hours</b>	M 4-5, W 1-2 ; and/or by appointment.
<b>Textbook</b>	Real Analysis, Bartle and Sherbert, 3rd Edition.

## 1 Course Overview

This course aims to teach the students the concept of “rigorous mathematical proof.” Mathematical analysis is the rigorous study of the concepts behind elementary calculus. In this class the students will take a closer look at the concepts of real numbers, limits, continuity and differentiation and learn to do proofs. For most students this will be the first course that gives a glimpse of what pure mathematicians do (and what any applied mathematician should know!)

## 2 Learning Goals and Objectives

By the end of the semester the students should have mastered the concept of “rigorous proof.” The students must be able to write proofs clearly and

concisely. Students are also expected to have mastered the logical underpinnings of the core concepts behind the analysis of sequences and functions on the real line.

### 3 Syllabus

I will cover the material from appendix A, chapters 1-6. The syllabus may be modified if necessary as the class progresses. The main idea of this course is that you learn to apply rigorous mathematical reasoning (known as proofs) to demonstrate the answers to problems. It is a **difficult** course and requires a good deal of time and effort.

### 4 Grading Policy

Letter grades are based on total score from homework problems, quizzes, two in-class midterm exams, and a final comprehensive exam. Homeworks carry 25%, quizzes carry 15%, two midterm exams each carry 15% and the final exam carries 30%. If the total score is  $S$  (out of 100) then the grades are roughly determined as follows:

- A  $90 \leq S \leq 100$
- B  $80 \leq S < 90$
- C  $65 \leq S < 80$
- D  $50 \leq S \leq 64$
- F  $S < 50$

However factors such as the overall distribution of scores  $S$  as well as consistency in homework and quizz performace also may affect the final letter grade.

### 5 Homeworks and quizzes

Homeworks are given weekly - will be posted on the web site - and are due in class on Fridays. Late homeworks are **not** acceptable unless you have documented medical reasons.

It is important that you do all the homeworks. This helps you assimilate the material thoroughly.

Total of 3 quizzes (30 minutes long) will be given in class.

## 6 Exams

The tentative dates for the two in-class mid-terms are September 26th Friday and October 31st Friday. (These happen during regular class hours in MP102).

**The final exam is scheduled to be on Dec 12th Friday in MP102. This covers the entire course material.**

Makeup exams may be given only under **exceptional** circumstances, and only with **written documentation**. You need to obtain **prior approval** from me except in case of unexpected medical emergency.

## 7 Calculators

**No calculators will be needed or are allowed during any of the exams or quizzes.**

## 8 Academic Misconduct

*Plagiarism and aiding others in plagiarism are considered forms of academic misconduct. This applies to exams as well as homeworks. For instance copying parts of someone else's homework and submitting as your own work would constitute academic misconduct. Such academic misconduct could result in disciplinary action which may include suspension or dismissal. Please consult the UMBC's Student Academic Conduct Policy for detailed information.*

**Wish you all a productive and pleasant experience with MATH 301!**