

21:640:238:Q1 Foundations of Modern Mathematics Fall 2010

Class meetings: MW 10–11:20, Hill 202

Instructor: John Randall

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Office hours: M 9–10, WTh 11:30–1

Course web site: <http://pegasus.rutgers.edu/~randall/238/>

Textbook: Steven Galovich, *Doing mathematics: an introduction to proofs and problem-solving*, 2nd edition, Cengage, 2007. ISBN 9780495108160.

Prerequisite: Calculus II

Assessment: We will have two in-class exams, a final exam, weekly quizzes, short writing assignments, and presentations. They will be weighted as follows:

Exam 1	15%
Exam 2	15%
Final Exam	20%
Quizzes (total)	10%
Writing	20%
Presentation	20%

Course description

The aim of this course is to learn the basic terminology and techniques for expressing mathematics, and in particular to learn to write proofs and solve problems. We will also emphasize communication of mathematics, both in written and oral form.

The quizzes and exams will concentrate on the mathematical content of the course: the writing assignments and presentations will concentrate on effective communication.

Topics

We will cover the following topics, which are in Chapters II–V of the book. A more specific list will be given in class.

1. Logic: propositional calculus, sets, predicates, quantifiers.
2. Proof: direct proof, indirect proof, mathematical induction.
3. Sets and relations: sets, relations, functions, equivalence relations, number systems.
4. Cardinality: countable and uncountable sets.

Attendance Policy

Students are expected to attend all classes and to complete all assignments. No makeups will be given for quizzes. No makeups will be given for exams except for absences due to the recognized grounds described in the catalog.

Important dates

Wed	Sep	1	Classes start
Mon	Sep	6	Labor Day: no classes
Wed	Sep	8	Monday schedule
Thu	Sep	9	Last day to drop classes
Fri	Sep	10	Last day to add classes
Mon	Oct	11	Exam #1
Wed	Nov	3	Last day to drop classes with a ‘W’
Mon	Nov	15	Exam #2
Mon	Nov	22	Wednesday schedule
Wed	Nov	24	Thanksgiving recess starts
Sun	Nov	28	Thanksgiving recess ends
Mon	Dec	13	Classes end
Wed	Dec	22	Final exam, 11:45–2:45