

Course Information

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Instructor:	<i>Phone number:</i>	(502)852-5845 (x5845)
	<i>Office:</i>	Natural Sciences Building 231
	<i>Office hours:</i>	M11:00–12:00, R11:00–12:00
	<i>Alternative office hours:</i>	T13:00–14:00, W15:00–16:00, or by appointment

Course Websites:

http://blackboard.louisville.edu/webapps/nosession/course_redirect.jsp?course_id=MATH-311-

<http://aleph.math.louisville.edu/teaching/2012FA-311>

Lecture: MWF 10:00–10:50 in Speed 106

Prerequisites: MATH 205 or ENGR 101.

Description: Introduction to abstract mathematics with particular attention to developing proof-reading and proof-writing skills. The basics of set theory, functions, relations, number systems, countability.

Text: *Mathematical Proofs: A Transition to Higher Mathematics*, by Chartrand, Polimeni, and Zhang, second edition (ISBN 9780321390530)

Objectives: We will learn in this class how to read and write mathematics, and how to craft proofs. We will learn about the fundamental concepts of sets, relations, and functions, and the specific proof tools of direct implication, contradiction, and induction. We will apply our mathematical reasoning to results in set theory, number theory, and combinatorics.

Responsibilities: You are responsible for attending class daily and maintaining comprehension of the material presented in class. Short problems will be presented on a roughly daily basis, and longer problem sets presented infrequently and posted online after class. You shall complete all assigned problems promptly, and attend examinations on **October 5 during class**, **November 16th during class** and **Wednesday, December 12 from 8:00–10:30**. Extracurricular interaction with your fellow students, and with the instructor, will be very useful in developing your comprehension.

Special needs: Any scheduled absence during the examinations, or any other special needs, *must* be brought to my attention during the first week of class. During a scheduled absence, you are expected to complete the daily assignments by e-mail. Absence due to unforeseen emergencies will be dealt with on a case-by-case basis and must be documented.

Honesty: There are many resources available to help you succeed in this class, particularly consultation during office hours and cooperation with other students. It is important, however, that all papers handed in be the result of your individual comprehension of the course material. Duplication of others' work is both a disservice to your own education and a serious violation of the university's academic honesty policy.

Grades: Problem sets and daily problems will account for 40% of your grade, the midterm examinations will each be worth 15%, and the final examination will be worth 30%. A 90% overall guarantees a grade of A–, 80% guarantees a B–, and 70% guarantees a C–.

Changes: The syllabus is subject to change. Changes will be announced in class and updated online.