

Syllabus

Introduction to Analysis

Math 3230/6235, Spring 2009

MW 1:00–2:15pm, Honors F 1:00–2:00, DSC 109
www.unomaha.edu/numtheory

Dr. Griff Elder 554-2842 (office)
DSC 223 *elder@unomaha.edu*

Important! Stop by during office hours of the first week of class for a chat

Office Hours:

MW 12:00–12:50pm, F 11:00–11:50am or *by appointment*

Materials: *Introductory Real Analysis* by Frank Dangelo and Michael Seyfried

Requirements:

4 Exams (incl. Final): 35 points each	=	140
Quiz/Proof Set Combo:	=	<u>+100</u>
		240

Grading Scale: 97 – 100% A+, 93 – 96.9% A, 90 – 92.9% A-, etc.

Purpose of Course:

This course teaches Calculus. But... “I’ve already taken Calculus,” you say. The difference is that in your Calculus sequence you learned the recipes. Here we learn why the recipes work.

Description of Work There will be about 9 quiz/proof set combos (roughly one each week). Each one will be worth about 12 points. This will amount to ≈ 108 points. At the end of the semester I will compute the percentage correct and you will receive a quiz/proof set combo score out of 100 points.

It is expected that you will do the homework in the text, because this is how you learn!

Caution: Do not expect this class to be as easy as other math classes that you have taken. I expect that for each hour of class you will spend *at least* three hours outside of class (with the T.V. off!) doing homework. Be prepared to spend long hours immersed in the material. For example, it is not unusual for a student to spend 20 hours on a problem set. Be sure to set aside at least 9-15 hours per week.

Miscellaneous:

Groups: It is fair to say that you *will* learn more from each other than you can learn from me. I would like to facilitate this. During the first week of class I will put you into groups of three or four. Purpose? To encourage (but not require) you to study together and work with each other on homework.

Finally:

- (1) If you have a question, ask immediately.
- (2) I will *not* accept late work, unless prior arrangements have been made. In an emergency, you should phone my office and leave a message.
- (3) You are expected to attend regularly. If you miss class, it is your responsibility to be fully aware of everything discussed in class and to turn all work in when due.
- (4) **Academic Honesty is expected. Any student caught cheating will receive an F for the course.**

Reasonable accommodations are provided for students who are registered with Disability Services and make their requests sufficiently in advance. For more information, contact Disability Services (EAB 117, Phone: 554-2872, TTY: 554-3799) or go to the website: www.unomaha.edu/disability

Honors Introduction to Analysis:

The goal of Honors Introduction to Analysis is to prepare you to take the Analysis Sequence (Math 4230/8236 and 4240/8246). It is a widely held opinion (among mathematicians) that a strong Math Major should have the Analysis Sequence, the Abstract Algebra Sequence (Math 4110/8116 and 4120/8126) and a course in Point-Set Topology (Math 4610/8616) in their background.

What will we do in Honors Introduction to Analysis? Dig into the material more deeply and do more challenging problems. What do we mean by dig more deeply? The level of a course is largely dependent on the textbook used. We will take our cue from Kenneth A. Ross's *Elementary Analysis: The Theory of Calculus* and cover Ross: §1-5, 7-12, 17-20, 28-29, 32-34. How does this translate into the sections from Dangelo and Seyfried's boo) listed in our schedule? Honors Introduction to Analysis simply covers 5 more sections: Dangelo and Seyfried §6.1-6.5.

I plan to hold an additional Honors Session each week (tentatively 1-2pm on Friday). During this session, we will go over the more difficult aspects of the material and work on some more challenging problems. To get honors credit, you will need to participate in these additional sessions and do the assigned Honors Problems.

Schedule
Math 3230/6235, Spring 2009

	Monday	Wednesday
Week 1 12-Jan	§1.1-§1.4	§2.1
Week 2 19-Jan	Holiday	§2.2
Week 3 26-Jan	§2.3	§2.4
Week 4 2-Feb	Problem Session	§3.1
Week 5 9-Feb	Exam 1	Exam 1
Week 6 16-Feb	§3.2	§3.3
Week 7 23-Feb	Problem Session	§3.4
Week 8 2-Mar	§3.5	§3.6
Week 9 9-Mar	Exam 2	Exam 2
Week 10 16-Mar	Holiday	Holiday
Week 11 23-Mar	§3.7	§3.8
Week 12 30-Mar	Problem Session	§4.1
Week 13 6-Apr	Exam 3	Exam 3
Week 14 13-Apr	§4.2	§4.3, 4.4
Week 15 20-Apr	§5.1	§5.2
Week 16 27-Apr	§5.3	§5.4
FINALS 4-May		Final Exam 1:00-3:00