

SYLLABUS FOR MATH 4210: ANALYSIS 1

1. KEY INFORMATION

Summer 2009
Time: TRF 11:00-12:30
Room: TBD
Instructor: Mike Wills
Email: mwills@weber.edu
Office: B4 522
Office Phone: (801) 626-7158
Office Hours: TRF by appointment
Text: *Gordon, Russell* Real Analysis- A First Course, 2nd Edition [available in Campus bookstore]. The ISBN is 0201437279.
Course Web page:
<http://faculty.weber.edu/mwills/teaching/Weber/2009/Summer/Math4210/math4210homepage.htm>
Welcome to Math 4210. I look forward to teaching you, and wish you all the best for the coming term.

2. PREREQUISITES

Math 2210 and Math 2270 with 'C' or better

3. HOMEWORK

Here is the homework page:
<http://faculty.weber.edu/mwills/teaching/Weber/2009/Summer/Math4210/math4210homework.htm>
Each write-up problem is out of five points and all problems will be graded. Each problem is given equal weight for the course as a whole. Since different assignments will often have a different number of problems, not all homework assignments are equal.

4. GRADE ALLOCATION

Your work will be broken down as follows:
Homework: 50%.
Class Participation: 50%.
The grade allocations will be as follows:

Grade	Score
A	90-
B	75-89
C	65-74
C-	60-64
D	45-59
E	-44

This is the preset scale. If a large number of the class does worse than expected, I will curve downwards as the case demands. Thus, if some one gets 95% for the

class, that will always result in an A. However, it is possible that some one with, say 87%, may also get an A in the event that I decide to curve.

5. THE MATERIAL THAT WE WILL COVER

We will start with the handout on set theory, then move on to chapter 1, and go as far in the text as we can. For this semester, getting to chapter 5 (or even chapter 6) seems like a reasonable goal.

6. HELP AND OFFICE HOURS

I keep open office hours. This means that if I am in my office, I will make time for you if I can. To guarantee that I will be in my office at a specific time outside of official office hours, you may want to make an appointment, preferably via email.

7. FURTHER READING

See the set theory handout for further reading about set theory. For analysis per se, here are some other books of interest.

7.1. Undergraduate real analysis. *Rudin, Walter* “Principles of Mathematical Analysis”, 3rd edition 007054235X

This book is my choice when I teach the full year of analysis. It is extremely terse, and the problem sets tend to be challenging. *Wade, William* “Introduction to Real Analysis”, 3rd Edition, 0131453335

I used the second edition of this book when I took undergraduate real analysis at CSUN. It’s less terse than Rudin. I found the presentation, or at least the typeface, inelegant.

Bartle, Robert and Sherbert, Donald “Introduction to Real Analysis”, 3rd Edition 0471321486

This seems to be a popular book. I’m not too familiar with it.

William Trench has a free online book available here:

<http://ramanujan.math.trinity.edu/wtrench/misc/index.shtml>

7.2. Undergraduate complex analysis. *Brown, James and Churchill, Ruel* “Complex Variables and Applications” (8th edition)

This is about the same difficulty level as our text. I used the 7th edition in math 3810.

7.3. Topology. *Sutherland, William* “Introduction to Metric and Topological Spaces” 0198531613

This text is about the same level as ours. The subject matter in this text is developed primarily as a tool in ours. I’ve used this book a lot- in at least two classes, as well as for qualifying exams and references.

Munkres, James “Topology” 0131816292

This text is more thorough than Sutherland’s and discusses algebraic topology as well. It is also still in print, and was used in the most recent topology class at WSU.

7.4. Graduate Analysis. [For those who find our current text too elementary]

Rudin, Walter “Real and Complex Analysis” 0071002766

The natural follow up to “Principles of Mathematical Analysis”.

Ahlfors, Lars “Complex Analysis” 0070850089

I used this text in graduate complex variables at CSUN. I like it a lot, but it is quite difficult.

Royden, H.L. “Real Analysis” 0024041513

I used this text in graduate real analysis at CSUN. It is pretty good.

8. ADDITIONAL NOTES

- 1) Please see me about any problems that come up, mathematical or otherwise.
- 2) Try to do as many problems from the text as you can.
- 3) This is a demanding class. You should expect to study for at least 2 hours outside of class for every hour in class. Plan accordingly. You are strongly encouraged to do homework every day. The assignments are quite long, so you should start on them before the due date.
- 4) The University is closed on Friday 3 July and Friday 24 July. We will not have class that day.