REAL ANALYSIS 2   MW 3:00-4:20PM   SPRING 2015   STUART 309

Instructor: Jonathan White

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Text: *Principles of Mathematical Analysis*, Walter Rudin, Chapters 1-8 and 11.

Participation: Since we will not have exams, full participation in class sessions is essential.

Presentations: The students will present (almost) all of the course material. We will divide up the material so that 1 to 3 students "adopt" each section, work through it in consultation with each other and me, and then present it in class.

Problems: Problems will be assigned for each day's material, usually selected by the students presenting that material, in consultation with me. Those will typically be due either the following class day or the class day after that. When good-faith attempt has been made but fallen short, subsequent attempts will generally be allowed.

Math Culture: As usual, various activities outside of class will be expected, as detailed on the fourth page of this syllabus.

Grading: Grades will be based on participation, presentations, assigned problems, and math culture, as detailed on the third page of this syllabus.

This class will pick up where we left off in Real Analysis 1 and cover construction of the reals, generalization of topics from the first semester to general metric spaces, sequences and series, Lebesgue measure & integration, and other assorted topics depending on student interest. The bulk of class material will be presented by students.

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Tentative Schedule

Monday 1/12 General Metric Spaces	Wednesday 1/14 Constructing $\mathbb{R}$ (Ch. 1 Appendix)
Monday 1/19 **No Class – MLK Day**	Wednesday 1/21 Constructing $\mathbb{R}$ (Ch. 1 Appendix)
Monday 1/26 Constructing $\mathbb{R}$ (Ch. 1 Appendix)	Wednesday 1/28 Constructing $\mathbb{R}$ (Ch. 1 Appendix)
Monday 2/2	Wednesday 2/4
Monday 2/9	Wednesday 2/11
Monday 2/16	Wednesday 2/18
Monday 2/23	Wednesday 2/25
Monday 3/2	Wednesday 3/4
Spring Break	
Monday 3/16	Wednesday 3/18
Monday 3/23	Wednesday 3/25
Monday 3/30	Wednesday 4/1
Monday 4/6 No Class – Mystery Holiday	Wednesday 4/8
Monday 4/13	Wednesday 4/15
Monday 4/20	Wednesday 4/22
Monday 4/27	Wednesday 4/29
Final Exam – 11am on Tuesday 5/5	

Any students with disabilities which might affect their performance in this class should contact me as soon as possible to arrange accommodations.

Coe's faculty has adopted an academic integrity policy. It is your responsibility to understand and follow it.

Diversity, in all its forms, is valuable.

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Grades will not be point-based, but rather activity-based. Earning a certain grade in this class will require accomplishing a certain number of tasks, rather than performance on selected examinations. The following table specifies the requirements for each grade:

	A	A–	B+	B	B–	C+	C	C–
Participation	29+	28+	27+	26+	25+	24+	23+	22+
Presentations	15+	14+	13+	12+	11+	10+	9+	8+
Problems	All	–2	–4	–6	–8	–10	–12	–14
Math Culture	12+	11+	10+	9+	8+	7+	6+	5+

All requirements for a given grade must be met in order to earn that grade, and except in extraordinary circumstances no grades below C– will be assigned. The notation in the table is, for example, "28+" for attending class at least 28 of the 30 scheduled sessions, and "–2" meaning all but two of the assigned problems was completed successfully.

Math Culture Points

A significant portion of the grade for this course will take the form of Math Culture Points. These will be earned through activities outside of class including, but not necessarily limited to, those listed below. Note that none of these is mandatory – there are far more opportunities than necessary to earn full credit. You should be able to select activities the are particularly relevant to you.

Activity	Units	Max #
Colloquium Attendance	1	–
Colloquium Presentation	1-3	2

Meeting Attendance
  Nebraska Conference for Undergraduate Women in Mathematics (January 23 – 25)
  SIGCSE Technical Symposium (March 4 – 7)
  University of Iowa Computing Conference (early March?)
  Midwest Undergraduate Mathematics Symposium (April 10 – 11)
	
	3
	3
	2
	1-3
		2

Mathematics Competition Participation
  Mathematical Contest in Modeling (February 5 – February 9)
  Iowa Collegiate Mathematics Competition (February 21)
	3	2

Math Culture Reading
  Some weeks specific readings will be posted on the course web page
  Articles from *Math Horizons*
  With approval, columns on maa.org, articles from *Math. Magazine*, *The CMJ*, etc.
	1	
		–
		5
		5

Math Club Activities (when appropriate) Winter Break Book, Movies, Pi Day celebration, Speakers, Workshops, etc.	1-2	5

Other Appropriate Coe or Outreach Activities
  Contemporary Issues Forum (February 3)
  Attending a Quantitative Research Symposium Presentation
  Job Shadowing in any relevant field
  Working with students at McKinley Middle School, etc.
	
	1
	1
	2
	1
		
		–
		3
		1
		3

You should plan to spread your participation throughout the semester. In each case above, credit assumes both full participation and posting a brief summary/response on Moodle **in a timely manner**. These reflections should generally be between 100 and 300 words, and include both a brief summary and your personal thoughts on the event, and **must be submitted within one week of the event**, or within the specified time window for other activities. Up to three units (15 points) of credit may be submitted after normal deadlines in the "Math Culture – Late" category on Moodle, but otherwise exceptions will not be made without serious extenuating circumstances.