REAL ANALYSIS 1 MWF 9:00-9:50AM FALL 2004 HICKOK 207

Instructor:	Jonathan White
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Office:	Hickok 206A
Office Hours:	3:00-3:50 MTWF, and by appointment
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Text:	*A Friendly Introduction to Analysis, Single and Multivariable*, 2nd Edition, by Witold Kosmala, Prentice-Hall; *A Tour of the Calculus*, by David Berlinski.
Problem Sets:	Problem Sets will be given throughout the term to supplement class work. Combined these will be worth 200 points (33.3% of the final grade).
Exams:	There will be two exams during the course of the semester, administered during class time. The dates of these are indicated in the schedule on the back side of this sheet. These exams will be worth 100 points (16.7% of the final grade) each. The final exam will be given Wednesday, December 11th, and will be worth 200 points (33.3% of the final grade).
Grading:	Grading will approximately follow a 90% A, 80% B, 70% C, 60% D scale.

"And what are these fluxions? The velocities of evanescent increments. And what are these same evanescent increments? They are neither finite quantities, nor quantities infinitely small, nor yet nothing. May we not call them ghosts of departed quantities?"

-Bishop George Berkeley, 1685-1753

Real Analysis is in many ways a dramatically different course than anything which precedes it in the mathematics curriculum. In some regards, students finally get a chance to see the sorts of things that professional mathematicians deal with -- but at the same time, many of these underpinnings are beneath notice once they've been properly laid. The simplest thing that can safely be said is that there are genuinely troubling issues left unaddressed by the undergraduate calculus sequence, and they must be dealt with before moving on.

It is also important to note at this point that the demands on students become qualitatively different in this course than in its prerequisites. Learning strategies which have succeeded in previous classes will not necessarily suffice at this level. If at some point these challenges or frustrations get too bad, I strongly encourage you to see me for extra explanation -- don't wait until you're overwhelmed. I'm here to help.

Tentative Schedule

Monday August 23rd §1.1 Sets	Wednesday August 25th §1.2 Relations	Friday August 27th §1.3 Induction
Monday August 30th §1.4 Proof Techniques	Wednesday September 1st §1.5 Inverse Functions	Friday September 3rd §1.6 Finite and Infinite Sets
Monday September 6th No classes – Labor Day	Wednesday September 8th §1.6 Real Numbers	Friday September 10th §1.7 Consequences of Real Numbers
Monday September 13th §2.1 Convergence	Wednesday September 15th §2.2 Limit Theorems	Friday September 17th §2.3 Infinite Limits
Monday September 20th §2.4 Monotone Sequences	Wednesday September 22nd §2.5 Cauchy Sequences	Friday September 24th §2.5 Cauchy Sequences
Monday September 27th §2.6 Subsequences	Wednesday September 29th §2.7 Review	Friday October 1st **Exam 1**
Monday October 4th §3.1 Limit at Infinity	Wednesday October 6th §3.2 Limit at a Real Number	Friday October 8th §3.2 Limit at a Real Number
Monday October 11th No class – Fall Break	Wednesday October 13th §3.3 One-Sided Limits	Friday October 15th §3.4 Review
Monday October 18th §4.1 Continuity	Wednesday October 20th §4.2 Discontinuity	Friday October 22nd §4.3 Properties of Cont. Functions
Monday October 25th §4.4 Uniform Continuity	Wednesday October 27th §4.5 Review	Friday October 29th §5.1 Derivatives
Monday November 1st §5.2 Properties of Derivatives	Wednesday November 3rd §5.3 Mean Value Theorems	Friday November 5th §5.3 Mean Value Theorems
Monday November 8th §5.4 Higher Derivatives	Wednesday November 10th §5.6 Review	Friday November 12th **Exam 2**
Monday November 15th §5.5 L'Hôpital's Rules	Wednesday November 17th §6.1 Riemann Integrals	Friday November 19th §6.1 Riemann Integrals
Monday November 22nd §6.2 Integrable Functions	Wednesday November 24th No class – Thanksgiving	Friday November 26th No class – Thanksgiving
Monday November 29th §6.2 Integrable Functions	Wednesday December 1st §6.3 Properties of Riemann Integrals	Friday December 3rd §6.4 Integration and Differentiation
Monday December 6th §6.5 Improper Integrals	Wednesday December 8th §6.7 Review	
Tuesday December 14th – 9am – Final Exam		

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

The faculty has adopted a policy on academic integrity. It is your responsibility to understand and follow it.

Diversity, in all its forms, is valuable.