Course Information
640:311 Advanced Calculus I
Spring Semester 2000

Weekly Schedule: M Th 2 Hickman 123 / W2 Hickman 130

Instructor: Yasmine Sanderson
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Office Hours: Th4 F2 and by appointment

Examination Dates:

First Hour Examination	Wednesday, February 16 (in class)
Second Hour Examination	Monday, March 27 (in class)
Final Examination	Tuesday, May 9, 12-3 p.m.

Text: Introduction to Real Analysis, 3rd ed. Bartle and Sherbert (John Wiley and Sons).

Grading Policy: the various components of the course are weighted as follows in the determination of your course grade.

First hour exam:	100 points
Second hour exam:	100 points
Homework, workshops, etc.:	100 points
Final exam:	200 points
Total:	500 points

IMPORTANT: The only reliable source for any changes made is the lecture. You are responsible for knowing these changes whether or not you come to class.

Lectures and workshop: Lectures will be held during Monday and Wednesday 2nd period. Workshop will be held during Thursday 2nd period. During workshop, you will work in small groups on various problems which will be handed out at the beginning of the period. At the end of the workshop, I will assign one problem which you will have to write up and hand in the following Thursday. **Attendance to workshops is mandatory.**

Homework: Homework will be assigned from the problems in the back of each chapter. Each homework assignment will be given in lecture along with its due date. Sometimes I will give additional problems that are not found in the book. Late homework WILL NOT be accepted.

Make Up Exam Policy: Make up exams are offered to those students who, for some legitimate reason, can not take the exam at the regular hour. Legitimate excuses may include illness, death in the family, accident, requirement to appear in court, having too many exams in a 24 hour period. The following excuses are NOT legitimate: alarm didn't go off, not knowing when the exam is being offered, not feeling prepared.
If you have a legitimate reason not to take an exam when it is being offered, you may take a make up exam IF AND ONLY IF you have received permission from me beforehand. You must notify me of your problem before the date of the exam and receive my permission to take a make up exam. To discuss this with me, you can see me in person, send me an e-mail message, leave a message under my office door or leave a message for me at the Undergraduate Office (Hill 303, 445-2390). The only exception to this rule occurs if you have an accident on the day of the exam. In this case,

I will give you a make up exam upon receipt of proof clearly stating you name and the date. This proof can be a doctor's note, a police report, or a hospital emergency room admission form. Example 1: You come to me after the exam with proof that you were in traffic court during the exam. I will NOT give you a make up exam because you knew in advance of the court date and should have notified me before the exam, not afterwards. Example 2: Your car breaks down just as you are coming to the exam. You must come with some proof of this: the towing receipt or a police report (with your name, date and TIME).

Please note: All cellular phones and beepers must be turned off during all class and exam times.

Syllabus:

Lecture	Sections	Topics
	1.1	to be read on your own
1	2.1.1-2.1.3	$\mathbf{R}$ as an ordered field
	2.1.5-2.1.13	
2	1.2	intersections of families of sets, definitions of $\mathbf{N}$, $\mathbf{Z}$, $\mathbf{Q}$
3	2.2	Absolute value, neighborhoods.
4	2.3, 2.4	Order completeness of $\mathbf{R}$. Archimedean property.
5	2.5.1-2.5.4	Nested-interval theorem
6		Catch-up and review of Chapters 1 and 2
7	3.1	Sequences and convergence
8	3.2	Fundamental theorems on convergence of sequences
9		First Hour Exam (in class)
10	3.3	Convergence of monotone bounded sequences.
	3.4.0 - 3.4.8	Bolzano-Weierstrass theorem
11	3.5.1-3.5.6	Cauchy Criterion
12		Catch-up and review of Chapter 3
13	4.1	limits for real-valued functions.
14	4.2	Limit theorems
15	5.1.1-5.1.7 , 5.2	Continuous functions
16	5.3	Boundedness, max and min, intermediate values
17	5.4	Uniform continuity and approximation
18	5.6	Monotone functions
19	6.1	Differentiation
20		Second Hour Examination (in class)
21	6.2.1-6.2.10	Rolle's Theorem and the Mean Value Theorem
	6.3.1-6.3.4	Extremum Tests, L'Hopital's Rule
22	6.4.1	Taylor polynomials
23	6.4	Taylor's theorem, Newton's method
24	7.1	Darboux sums and Riemann integrability
25	7.2, 7.3.1-7.3.6	Properties of the Riemann integral
26	7.3.7-7.3.18,7.4	Riemann integration via Riemann sums
27	8.1	Pointwise and uniform convergence
28	8.2	Interchange of limit operations