Mathematics 350 — Advanced Calculus 1

Fall 2007

Instructor: Werner Horn

Office: FOB 404, Tel. 677 7794;

Office Hours: TTh 11:00-12:00 or by appointment.

Textbook: James R. Kirkwood, An Introduction to Analysis, Second Edition

Homework: Homework will be assigned every week and collected. It will account for 20% of the grade. There will also be supplemental homework problems, which will not be graded, but which you are strongly encouraged to do.

Midterm Exam: There will be two exams. Each will count for 20% of the grade.

Final Exam: A cumulative final exam will account for 40% of the final grade.

Tutoring: There will be graduate assistants available for tutoring in SH 264 Monday through Thursday 2pm to 5pm. Students are strongly encouraged to take advantage of this free service.

Contents:

Learning Outcomes:

This course covers the Analysis component of the knowledge typically expected from a student with an undergraduate degree in mathematics. In particular students will learn

1. the topological foundations of modern analysis.
2. the major theorems of differential calculus
3. the foundations of the Riemann integral and its limitations.

Furthermore, students will learn the importance of proofs and practice writting clear and concise proofs of mathematical statements.

Hints:

The textbook is an important resource for this course, but not the only one. Students are encouraged to read the textbook before class. Moreover, students are encouraged to read othe books on the subject as a reference.

References:

1. W. Rudin, *Principles of Mathematical Analysis*
2. T. Apostol, *Mathematical Analysis*