Advanced Calculus II

Math 335-501
MW 4:30–5:45, ILB 465

Instructor: Prof. Josh Barnard
Office: 426 ILB
Office Hours: MW 3:30–4:30; TR 2:00–3:00
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Course Webpage: www.southalabama.edu/mathstat/personal_pages/jbarnard/S08-335/

Prerequisite: MA 334
Textbook: *Fundamental Ideas of Analysis*, by Michael Reed (John Wiley & Sons 1998)

Course Description: This is the second of a two course sequence designed to provide students with the theoretical context of concepts encountered in MA 125 through MA 227. Topics covered include integration of functions of one variable, pointwise and uniform convergence, integration and differentiation of series, differentiable mappings of several variables, chain rule, product rule and gradients, Mean Value Theorem, Taylor's Theorem, Inverse Function Theorem, Implicit Function Theorem.

Objectives: The goal of this course is to study more closely the ideas and concepts involved in the calculus of one real variable. Students will gain a rigorous understanding and working knowledge of the main concepts, theorems, and techniques. Mathematical exposition will be emphasized, and students will be expected to understand and produce proofs.

Standards of written work: Solutions must be neatly and clearly written and logically structured. Any theorems proven in class may be used as long as they are clearly cited. You may discuss homework problems with other students and with me, but the final write-up must be your own.

Announcements and Handouts: The course webpage has an announcement section and a handout section. Both of these should be checked regularly, and you are responsible for any information found there. In particular, the requirements and policies for this course may be modified as circumstances dictate; such changes will be provided to students in class and noted on the webpage.

Grading: Grades will be determined according to the following:

Homework — 30% total
Two Tests — 20% each
Final Exam — 30%

Homework: Homework problems and due dates will be posted online. The homework assignments are there to provide you with a minimum level of exposure to the materials outside of class time. You will need to do many more problems before you feel comfortable with the concepts involved. The way to succeed in a math course is to work (and understand) a large number of problems.

Tests: There will be a two in-class tests, tentatively scheduled as follows:

Test I — Wednesday, February 13
Test II — Wednesday, April 2

Final Exam: There will be a two-hour cumulative final exam. It is scheduled for Monday, April 28, 6–8 p.m. in the usual classroom.

Attendance: Routine attendance in class is essential and expected. As in any course, you should read the relevant section of the textbook **before** attending lectures. The homework webpage has a schedule listing the sections to go over. Routine participation in class is also expected. Attendance and participation will be considered in determining borderline grades.

Calculators: Calculators will be neither allowed nor necessary on the tests or quizzes.

Office Hours: If you have questions or problems, you are encouraged to come by my office during office hours, or make an appointment to come by some other time. Email is the best way to contact me. If you plan on coming during office hours, you need not notify me ahead of time.

Student Disabilities: If you have a specific disability that qualifies you for academic accommodations, please notify me *as soon as possible* and provide certification from the Office of Special Student Services. This office is directed by Ms. Bernita Pulmas and is located in the Student Center, Room 270, phone 460-7212.

Academic Misconduct: Students are assumed to be familiar with the current Academic Misconduct Code.