Mathematics 3220-01
Foundations of Analysis II
Autumn Semester 2009
MTWF 9:40am-10:30am, JTB 110

Instructor
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1 Course description

The course will be an introduction to the Mathematics of the Calculus of Functions of Several Variables. As a continuation of Foundations of Analysis I (which is a prerequisite for the course), it has the same objective of getting the student prepared in the essentials of mathematics: to give logically precise arguments and write detailed mathematical proofs, while studying some of the classical pillars of mathematics.

2 Text

There are many excellent texts (several are listed below) on the subject. The Department's choice for the course is the text:

- J. L. Taylor: FOUNDATIONS of ANALYSIS.

This text is available for download at

http://www.math.utah.edu/ taylor/foundations.html

or can be purchased at Kinko's, as well.

The course will be based on the second half of the notes, starting with Chapter 7, and students are urged (to have proper referencing) to obtain the whole text. We shall follow this text closely and lecture and discussion topics will be determined as the course proceeds. Supplementary material, prepared by the instructor, will also be provided frequently.

3 Grades, examinations, home work

During each class period home work will be assigned. Such assignments are to be turned in for grading on a weekly basis (assignments made on MWF of a given week will be collected the following T). After due notification, each student will be responsible for presenting to the whole class the solution of some chosen exercise. These presentations will take place on T. There will also be two examinations plus one final examination. The grade for the course will be determined as a weighted average of the grades received on the two mid term examinations, the final examination and the home work. The individual grades will be weighted as follows:

- Final examination: 30%
- Examination 1: 20%
- Examination 2: 20%
- Home work (written and presentation): 30%

(In writing solutions to examination questions and home work problems students should take immense care to practice their writing skills and should provide ample details explaining the various steps performed.)

4 Additional texts

1. A. Bruckner, J. Bruckner, and B. Thompson, Real Analysis, Prentice Hall, Upper Saddle River, 1997.

2. P.M. Fitzpatrick, Advanced Calculus: A Course in Mathematical Analysis. PWS Publishing Co., Boston, 1996.

3. K. Hoffman, Analysis in Euclidean Spaces,Prentice Hall, Englewood Cliffs, 1975.

4. J. Marsden and A. Tromba, Vector Calculus, Freeman and Co., New York, 1981.