Math 6301: Real Analysis

Term: Fall 2016, Monday 8/22 (class begin), Wednesday 12/7 (class ends)
Meetings: TR, 5:30pm–6:45pm, SLC 2.203

Instructor's contact information

Instructor: Dr. Zalman Balanov
Office: FO 2.408E
Office hours: TR, 4:15pm–5:15pm, or by appointment
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Prerequisites:

MATH 4301-2 or MATH 5301-2.

Undergraduate course in linear algebra (MATH 2418) or equivalent.

Course description:

Students will learn about the general theory of measure and integration. Topics to be covered include: the real numbers system, Lebesgue measure and measure theory, integration, differentiation and classical Banach spaces.

Learning outcomes:

(a) Students will understand and be able to articulate the key concepts of measures, integration and differentiation.

(b) Students will understand and be able to articulate the basic theory and properties of L^p spaces.

(c) Students will be able to apply the above topics to problems in analysis.

Required textbook:

"Introductionary Real Analysis" by A. N. Kolmogorov and S. V. Fomin.
The course covers most of the chapters 2 (Subections 5.1-5.2, 6.1-6.6, 7.1, 7.4), 3 (Subsections 11.1-11.2, 12.1, 12.2), 7 (Sections 25, 26, 27), 8 (Sections 28, 29, 30), 9 (Sections 31,32, 33) and 10 (Sections 35 and 37). There will be homework assignments, two midterm exams and one final exam.

Suggested textbooks and materials

"Real Analysis: Modern Techniques and Their Applications" by G. B. Folland. Additional reading materials may also be provided by the instructor.

Assignments and exams

Homework assignments: The homework assignments will be given on the regular basis. Each one of them is going to have a specific deadline. Students are expected to work on each assignment individually and turn it by the specified deadline. Students are strongly encouraged to work more than the class assignments.

Exams All students are expected to take two exams. Show all details of your work for each problem you solve during exams (unsupported answers will receive little or no credit). Graded exams and class assignments will be returned to you as soon as possible. Any document not picked up by the end of finals week will be destroyed. Final exam will not be returned to the students but held for review for one year. The midterm and final examinations have been scheduled as follows:

	Date	**Time**	**Room**
Midterm	October 6, Thursday	7:00pm–9:00pm	TBA
Final	Available at Galaxy	after September 7	

Grade policy

Graded assignments: 30%
Midterm exam : 35%
Final exam: 35%.

Important Dates

Monday, August 22: Classes begin
Monday, September 5: University Closing, Labor Day
Thursday, November 24 – Saturday, November 26: University Closing, Thanksgiving holidays
Monday, November 21–Wednesday, November 23: Fall break
Wednesday, September 7: Census Day
Wednesday, September 7: Last Day to drop a class without a "W"
Thursday, October 6: Midterm Exam
Monday, December 7: Last Day of Full-Term Session

Further important dates:
http://www.utdallas.edu/academiccalendar/

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please go to http://go.utdallas.edu/syllabus-policies for these policies.

These descriptions and timelines are subject to change at the discretion of the Professor.