

Spring 2012
Math 8302: Manifolds and Topology

Lectures: MWF 1:25–2:15 in Vincent Hall 2.

Office Hours: WF 2:30–3:30 pm in Vincent Hall 355.

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Text: John Lee, *Introduction to Smooth Manifolds*, Springer University 2002. The textbook is available at the University bookstore, and also available on reserve in Math Library.

Prerequisites: Math 8301 or instructor's consent.

Course web page: www.math.umn.edu/~akhmedov/M8302.html

Course Outline: This is a second course in topology of manifolds. The spring semester we plan to cover smooth manifolds, tangent spaces, vector fields and vector bundles, embedding/immersion, Sard's theorem, differential forms, integration, de Rham cohomology, duality in manifolds, curvature, Gauss-Bonnet theorem.

Grading: The course grade will be based on homework assignments, in-class midterm and a comprehensive take-home final, with the following weights:

Homework (36%)

Midterm (in class) (30%) (Monday, March 5)

Take Home Final (34%)

Homework: There will be 8 homeworks in this course, each worth 45 points. Homework will be a fundamental part of this course, and will be worth 360 points (36% of the course grade). The first homework assignment will be due on 01/30. The grader will pick up the homework usually on Mondays (sometimes on Wednesday) after the class. This means that *NO LATE HOMEWORK CAN BE ACCEPTED*. You may work together on homework, but everyone must turn in their own written solutions. Please staple your homework before handing it in. If you have questions about the homework, it is best to ask during my office hours. Please check the course webpage for homework assignments and due dates: www.math.umn.edu/~akhmedov/M8302.html

Midterm and Final Exam: There will be an in-class midterm on Monday, March 5th and a comprehensive take-home final examinations. The exams worth $30\% + 34\% = 64\%$ of the final course grade. TAKE HOME FINAL DUE: by 2.00pm Friday, May 11.