

Math 9160, Fall 2011

Smooth Manifolds

Syllabus

Instructors: Rasul Shafikov, MC 112, shafikov@uwo.ca (emails will be answered within 48 hours).
Office hours: Tuesday 1 PM - 2:30 PM in MC 112.

Textbook: *Introduction to Smooth Manifolds*, by John. M. Lee. Springer, 2002. ISBN-10: 0387954481.

Course web page: <http://www.math.uwo.ca/~shafikov/9160/>

Visit this page for up to date information on the course.

Course Description: Course meets MW 11:30 AM - 1 PM in MC 108.

Manifold structures appear everywhere in mathematics and in physics. The goal of the course is to give a gentle, yet rigorous introduction to basic notions associated with smooth (differentiable) manifolds such as smooth structures, tangent vectors and covectors, vector bundles, immersed and embedded submanifolds, differential forms, foliations, etc. Unlike a course in differential geometry we will NOT be discussing the curvature tensor or connections.

Prerequisites: Basic undergraduate linear algebra, real analysis, and a course in general topology. In particular, we will be working with covering spaces. These will be briefly discussed at the beginning of the course, but it is recommended that a student should at least be familiar with the notion of the fundamental group and covering spaces.

Homework: Homework will be assigned biweekly, and will include routine exercises as well as some challenging problems.

Exams: There will be a Midterm and a Final Exam.

Senate Regulations on Scholastic Offences Please note the following points, which are required to be stated in this outline by the Senate regulations.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

<http://www.uwo.ca/univsec/handbook/>

Specifically, the following document outlines scholastic discipline for graduate students:

http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_grad.pdf

Evaluation: Biweekly homework = 33%, Midterm = 33%, Final examination = 34%.