Math 5344  Smooth Manifolds

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Office hours. Monday 4:00 - 4:45, Tuesday and Thursday 3:00 - 3:45, Wednesday 2:00 - 2:45; and by appointment if necessary.


Objectives and Contents. This course is an introduction to smooth manifolds and the tools used to do mathematics on smooth manifolds. The course prepares the student for an introduction to differential geometry.

Prerequisites. A student should have seen point-set topology of Euclidean space (e.g., in an analysis course) and be able to make the leap to the ideas of open, closed, and compact sets and of continuous maps and homeomorphisms in the context of more general topological spaces. The student should have the mathematical maturity typically associated with completion of a class equivalent to Math 4225 or Math 4124. The student should be familiar with vector calculus and linear algebra at the level those subjects are taught in our 3000-level classes.

Internet. The following are two internet sources of information about this course.

From the VT math homepage (https://www.math.vt.edu), click on People, then Faculty, then Haskell, Peter. Here you will find my office hours and the course policy statement (the document you are reading, often called the “course contract”).

At the address https://www.math.vt.edu/people/phaskell/5344 (not reachable via a trail of links) you will find the course policy statement (the document you are reading, often called the “course contract”). During the semester I may tell you that additional assignments and/or handouts have been posted here. I suggest that you bookmark this address.

Grading. Grades will be based on handed-in homework, which will be graded using a partial-credit framework. Percentages of at least 90, 80, 70, 60 guarantee grades of at least A-, B-, C-, D- respectively. All graded work counts. No scores are dropped.

Missed work. If a student fails to hand in an assignment on time, his/her score is zero unless the reasons for the failure are serious, unavoidable, and beyond the student’s control. The instructor reserves the right to verify that the reasons are serious, unavoidable, and beyond the student’s control. It is to the student’s advantage to inform the instructor of such reasons before missing the work. When work is missed for such reasons, the instructor, after consultation with the student, will decide how to handle the missed work.

Honor. Homework may be discussed with other students as well as with the instructor. However, in writing up an assignment to be handed in, each student works alone (without other students or other students’ papers) and certifies that what is written accurately represents the student’s own understanding of the material expressed in the student’s own words. In working, or in preparing to work, homework problems, students may not consult partial or complete solutions of the problems that have been prepared by anyone else. The prohibited solutions include, but are not limited to, solutions by current or former teachers or students at VT or elsewhere, whether these solutions are posted on the web or available from other sources. The honor code applies to all graded work in this course.

Accommodations. If you are a student with special needs or circumstances, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please meet with me as soon as possible during my office hours.