

Instructor

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Tentative Office Hours: Tuesday & Friday 10:00-11:30 am

Objectives

This is a half of the graduate compulsory courses in Geometry and Topology, the other half being MAT8021 Algebraic Topology. The main topics are smooth manifolds and differential topology.

For undergraduate students, this is a sequel to MA327 Differential Geometry, using the modern language of differential topology to introduce the notion of differentiable manifolds as a higher-dimensional generalization of curves and surfaces.

We will cover most of Chapters 2-8 in the Dundas text (see below).

Prerequisites

No prerequisite for graduate students.

Prerequisite for undergraduate students is MA327 Differential Geometry, or consent by the Department of Mathematics.

Textbooks

We will be working from Bjørn Ian Dundas's [*A short course in differential topology*](#), available in PDF from the author's webpage and in print from Cambridge University Press.

Useful references include 《微分拓扑新讲》张筑生编著 and 《微分流形初步》陈维桓编著 as well as John M. Lee's *Introduction to smooth manifolds*.

Exams

There will be one final exam worth 50% of your final grade.

Homework

There will be assignments for each chapter to be posted on the "Assignments" page. Homework is worth 50% of your final grade. Students must make arrangements in advance if they will not be handing in homework on time.

We encourage you to discuss homework problems with your classmates, including strategies for solving different kinds of problems. However, when you actually write up your solutions, you must do this on your own.