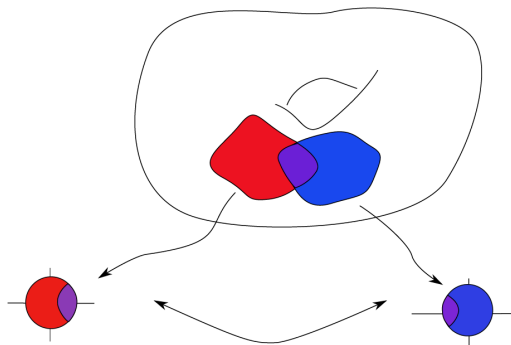


# MATH B530: Differential Topology

## Mathematics Department, Bryn Mawr College

**Prerequisite:** Real Analysis II or permission of the instructor.



What comes to your mind when you think of Calculus? Perhaps you think of taking derivatives or doing integrals. It is a fascinating, extremely rich subject with countless applications. Much of calculus deals with smooth functions on standard Euclidean space. One generalization of this standard calculus is to generalize the types of functions being examined, a topic examined in graduate-level analysis. Another generalization is to generalize the domains of the functions, the focus of differential topology. In this course, we will learn how one can do *calculus on smooth manifolds*, which are spaces that locally like Euclidean space.

Differential topology is a basic foundation for many areas of current research in both the pure and applied realms. In this course, you will gain a deep understanding of the important concepts of Manifolds, Smooth Maps, and Integration on Manifolds. The primary text for the course is *Introduction to Smooth Manifolds, Second Edition* by John M. Lee.