



Math 17 Spring 2020

An Introduction to Math Beyond Calculus:

Knot Theory

MWF 2:10 - 3:15pm, Room TBA

Description: A mathematical knot is a closed loop in three-dimensional space. Many questions in knot theory are easy to state, but difficult to answer; we will set out to explore some of these questions. In this course, we will rigorously define knots and what it means for two knots to be equivalent. We will then discuss various mathematical techniques which arise in knot theory and apply these techniques to problems. The topics may include knot coloring, unknotting number, Alexander polynomials, surfaces whose boundary is a given knot, symmetries of knots, and higher dimensional knot theory, among others.

Along the way, we will touch on ideas and techniques from various areas of mathematics: topology, graph theory, linear algebra, abstract algebra, and number theory.

Textbook: Knot Theory by Charles Livingston

Prerequisite: Math 8 or placement into Math 11

If you have any questions, please contact:

Instructor: Samantha Allen

Office: Kemeny 311

Email: samantha.g.allen@dartmouth.edu

