Math 280: Knots, Surfaces, 3-manifolds
Winter 2021

Instructor: Jennifer Schultens

Course description:

This course will be dedicated to studying low-dimensional manifolds
and the myriad ways in which they can be positioned with respect to
each other. We will cover the classification of surfaces, basics facts
and techniques related to 3-manifolds, knots in surfaces, and knots in
3-manifolds. The emphasis will lie in constructing and understanding
examples of these objects with a given set of pertinent characteristics
and in acquiring and honing the tools that allow us to distinguish
between these examples.

Reading:

Lickorish, An Introduction Knot theory, Springer 1997.
Schultens, Introduction to 3-manifolds, AMS 2015.

Procedural details:

Lectures will take place three times a week, at a time TBD, most likely
MWF mornings. In addition to attending lectures, students will select
a topic to study independently. They will report on this topic orally by
giving a 30 minute presentation (presentations will usually take place
in class but other arrangements are possible) and, by way of a final
project, submit a 5 page written summary.