

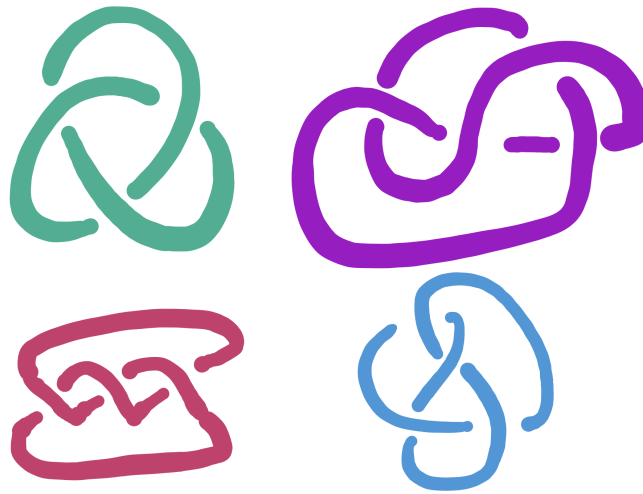
MATH 3094-001 - SPRING 2022

Knot Theory

Instructor: Katie Hall

Time: Tuesday/Thursday 11:00am-12:15pm

Which of these knots are the same? How can we use mathematical objects to tell them apart?



Learn the answer to these questions and more this Spring in MATH 3094: Knot Theory!

Course Description: The objectives of this course are twofold: First, students will learn how to distinguish knots using both basic knot invariants like 3-coloring and more complicated invariants like knot polynomials. They will learn how to determine properties of a knot, for example, whether a knot has an alternating knot diagram, from these invariants. Students will also learn about surfaces, including the classification of orientable and non-orientable surfaces. Finally, we will tie these ideas together to see what surfaces we can get from knots.

Second, this class will introduce students to potentially new proof techniques including how to write an appropriately rigorous proof in a very visual area of math.

Prerequisites: Math 2710 or 2142Q is preferred. The course requires only linear algebra but is proof based so some familiarity with proofs and/or mathematical maturity is necessary. Enrollment requires instructor permission. E-mail instructor with a description of your mathematical background for a permission number.

Questions? Email the instructor, Katie Hall, at katie.hall@uconn.edu.