Contact Information

Instructor: David Mehrle (rhymes with "early") (he/him/his)

Email: davidm@uky.edu

Office Hours: MW 9:00 - 10:00 AM in POT 837

Coordinates

Lecture: MWF 1:00 pm - 1:50 pm in CB 347

About this Class

This class is an introduction to the mathematical field of topology. We will use the sub-field of knot theory to explore ideas in modern algebraic and geometric topology, such as: topological invariants; the different ways that you can "model" a topological space; and different notions of topological equivalence (homeomorphism vs homotopy).

Learning Objectives

By the end of the semester, you will be able to:

- distinguish between knots (with a small number of crossings) using knot invariants
- summarize technical mathematical papers and articles and place them in their context
- write clear, well-reasoned and logically sound mathematical proofs
- communicate mathematical ideas with your peers

Class Structure

This class will work a little differently than the traditional math class. There will be a lecture once a week (usually on Mondays), followed by a problem session (usually on Wednesdays) and then presentations (typically on Fridays). The problems from the problem set will be due on the following Monday as homework. In the presentations on Fridays, you will be expected to present your progress on the problems from the problem session on Wednesday. You may present work-in-progress, ideas, or simply explain why you are stuck, but if you are called upon to present, you should present something.

I also hope that this class will be fun for you. If there's a topic you would like to learn, or if you have any suggestions or feedback, please speak up! I am happy to change things around.

Expectations

I expect that you will:

- attend nearly every class;
- behave in a manner conducive to an atmosphere of learning. This includes (but is not limited to) being courteous and respectful to yourself, other students and the instructor, being an active participant in class activities, arriving to class on time, and refraining from any behavior that may distract or disturb other students;
- abide by the academic policies of the University of Kentukcy and the rules regarding academic offenses.

Disabilities

Students with disabilities who require accommodations to participate in this class are asked to notify me as soon as possible and to provide me with a Letter of Accommodation from the Disability Resource Center(drc@uky.edu or 859-257-2754). Letters must be received at least one week prior to the requested accommodation.

If you suspect that you may have an undiagnosed/undocumented learning disability, the UK Counseling Center may be able to help.

Diversity, Equity, and Inclusion

I believe that:

- Every student deserves to be treated with dignity and respect.
- Your ability to do mathematics is entirely unrelated to your worth as a human being.
- Mathematical potential is distributed equally among different groups, irrespective of geographic, demographic, and economic boundaries.
- Everyone can have joyful, meaningful, and empowering mathematical experiences.
- Grades are not a judgement of you as a person, but a snapshot of your performance at a particular moment. They are unfortunate realities of the system we work in. You should use them to inform your learning, but do not let them hinder it.

These were inspired in part by the four axioms of Frederico Ardilla.

If at any point you feel unwelcome or uncomfortable in this class, please reach out to me immediately so I can change what I am doing or can intercede with a classmate on your behalf. Here is the official policy of the University of Kentucky on inclusion.

The instructor reserves the right to modify this syllabus at any time with proper notice.