

Mathematics 696, Spring 2021 Topics: Introduction to Topology (3 credits)

Meeting times: MWF 2:00–2:45 PM, [Zoom Meeting 999 5892 3164](#) [Passcode: 738154]

Instructor: Prof. Jeremy Martin (you can call me “Jeremy”)

Contact info: jlmartin@ku.edu (strongly preferred) or (785) 864-7114 (voice)

Office hours: After class every day and Mon 11am–12pm, [same Zoom meeting](#), or by appointment

Web/Email: Most course material will be on [Blackboard](#). Collaborative LaTeX files may be shared on [Overleaf](#). Course materials are not to be distributed publicly. I will periodically send class information (announcements, homework hints, etc.) to all students’ KU e-mail accounts. You are responsible for checking your e-mail regularly so as to receive this information.

Prerequisites: Math 500 (Intermediate Analysis), or permission of the instructor. You should have some experience reading and writing proofs.

Course description: This course will cover the basics of point-set topology: abstract topological spaces, basic concepts (closure, bases, some separation properties), fundamental properties (compactness, continuity, connectedness) and metric topology. Time permitting, we will study the classification of 2-dimensional manifolds and/or the definition of the fundamental group of a space.

Textbook: *Topology Through Inquiry* by Francis Su and Michael Starbird. Available from the [KU Bookstore](#) or the [American Mathematical Society](#); list price \$59.

Course format: We will largely follow the practices of [inquiry-based learning](#) (IBL). I will do very little lecturing; instead, **you will be expected to work out solutions in advance and be prepared to present them to your peers during class sessions**. Each student should expect to present approximately one problem a week. You are also expected to provide constructive criticism of your peers’ presentations.

Presentation logistics: You will be responsible for preparing approximately 5–7 problems for each class day (the number will vary depending on problem length). You will need to write up your solutions in advance so that you are ready to present. You can either handwrite solutions and scan them in, or else typeset them using LaTeX (if you are not comfortable with LaTeX right now, you will quickly become proficient).

Please, please, keep your camera on during class sessions if at all possible. Online classes are inferior to the real thing, and we would be doing mathematics in person if I thought it were safe. That isn’t feasible this semester because of COVID-19, I would like us all to have as lifelike an experience as possible, and mathematics is a human endeavor, so I hope we can see each other’s faces as much as possible.

Problem Sets: I will post problem sets on Blackboard at least a week in advance of their due dates. There will typically be a problem set due each week. Each problem set should be submitted by 11:59pm on the day it is due.

- You are encouraged to collaborate with other students, but you must write up the problems by yourself and acknowledge all collaborators explicitly
- As is standard in IBL courses, you may not consult any outside sources, including the Internet or other textbooks; the goal is for *you* to be the one to create mathematics.
- Solutions must be typeset using LaTeX. You may either email me your write-ups as PDF files, or share them via [Overleaf](#) (you can set up an account for free). LaTeX resources are available on Blackboard.

Grading scale: Your grade will be calculated as follows:

- 40% written problem sets
- 20% class participation (presenting and critiquing other students' presentations)
- 15% midterm exam (tentatively scheduled for Friday, March 19)
- 25% final exam (Monday, May 10, 1:30pm–4:00pm)

A score of 90% guarantees you an A, a score of 80% guarantees you a B, etc. I may lower these requirements for letter grades at my discretion, but I will not raise them.

If you experience any sort of disruption due to COVID-19, please let me know as soon as possible! I will make all reasonable accommodations for students who need them and will not penalize you for circumstances beyond your control.

KU COVID-19 resources include [KU's main COVID-19 page](#), [Protect KU](#), and the [Employee Handbook](#). See also resources at [Kansas Department of Health and Environment](#) and [Lawrence/Douglas County Public Health](#).

Calendar notes: Per the [official KU calendar](#), the class will meet for a total of 41 days, starting Monday, February 1 and ending Wednesday, May 5. A [detailed course schedule](#) is available; topics in the future are subject to change.

Makeup work: If, for some legitimate and unavoidable reason, you are unable to turn in a homework assignment on its due date, you must notify me *in advance* to make appropriate arrangements.

Incompletes: A grade of I is a rare occurrence and is reserved for cases in which a student has completed most of the course work at an acceptable level, but is prevented from completing the course due to extraordinary nonacademic circumstances. (COVID-19 certainly might be one of those circumstances.) If you think an incomplete may be warranted, you must consult with me as soon as possible, preferably before the date of the final exam.

Academic honesty and collaboration: You are required to abide by all KU policies on academic integrity. Cheating, plagiarism or other academic misconduct will result in formal disciplinary charges and sanctions. You are encouraged to collaborate with other students on the homework assignments. However, *each student must write up his or her own solutions and acknowledge all collaborators*. Copying someone else's homework, allowing someone else to copy yours, and copying the solutions from the Internet are all forms of cheating. Refer to the [official KU policies on academic misconduct](#) for more information.

Disability accommodations: The Student Access Center (22 Strong Hall; access.ku.edu; 785-864-2620 V/TTY) coordinates accommodations and services for all students who are eligible. If you have a disability for which you wish to request accommodations, please contact SAS as soon as possible. Please also contact me privately in regard to your needs in this course.

Religious accommodations: If you know that a scheduled assignment will conflict with a mandated religious observance, please contact me in advance to make appropriate arrangements.

Intellectual property: Course materials prepared by the instructor, together with the content of all lectures, are the intellectual property of the instructor. Video and audio recording of lectures and review sessions without the consent of the instructor is prohibited. Upon reasonable request, the instructor will usually grant permission to record lectures, on the condition that such recording is used only as a study aid by the student making the recording, and is not modified or distributed in any way. Course materials posted online, including recordings of class sessions, are intended for the personal use of students in the class and must not be redistributed without the instructor's consent.