

Course Syllabus

MTG 4303/5317, Introduction to Topology 2, Spring 2024

Instructor: Henry Adams

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Office: Little Hall 418

Office hours: Mon 3:00-3:50pm and Wed 1:55-2:45pm, or by appointment

Lectures: MWF 6th period (12:50-1:40pm) in Little Hall 233

Textbook: *Topology* by James R. Munkres, Second Edition

Class Webpage: <https://people.clas.ufl.edu/henry-adams/mtg4303-5317-S2024>

Course Overview: This course is the second part of a two semester introduction to topology. In the first few weeks, students will learn a few advanced topics of general topology. The majority of the course will cover basic topics and examples in algebraic topology. Topology studies shapes and surfaces, sometimes in higher dimensions, along with the continuity properties of functions between two such shapes. Algebraic topology translates difficult questions about spaces into algebraic questions that can be answered. We begin with advanced topics in general topology, including the Tietze extension theorem, Tychonoff theorem, and Stone–Čech compactification. The majority of the course will focus on algebraic topology, including the fundamental group and covering spaces, the Seifert-van Kampen theorem, and the classification of surfaces.

The catalog course description is available at

<https://gradcatalog.ufl.edu/graduate/courses-az/mathematics>

and we also refer students, especially graduate students, to the first year graduate exam topics at <https://math.ufl.edu/first-year-exam-syllabi/mtg-5317-introduction-to-topology-2>.

Schedule:

- Weeks 1-3: Tietze extension theorem, Tychonoff theorem, Stone–Čech compactification
- Weeks 4-8: The fundamental group
- Weeks 9-12: The Seifert-van Kampen theorem
- Weeks 13-15: Classification of surfaces

Goals: Students will become fluent with the main ideas and the language of topology and algebraic topology, and will be able to communicate these ideas to others. Students will learn how to write rigorous mathematical proofs and how to construct counterexamples. A goal of the class is to teach the foundations of rigorous argument through proving claims built on axioms.

Prerequisites: MTG 4302/5316 (Topology 1) with a minimum grade of C, or permission from the instructor depending on mathematical experience.

Requirements: Your grade will be based on the following components: 40% homework, 20% midterm, and 40% final exam.

Grading scheme: A if $\geq 90\%$, A- if $\geq 83\%$, B+ if $\geq 77\%$, B if $\geq 73\%$, B- if $\geq 70\%$, C+ if $\geq 67\%$, C if $\geq 63\%$, C- if $\geq 60\%$, D+ if $\geq 57\%$, D if $\geq 53\%$, D- if $\geq 50\%$.

Homework: The clarity of your solutions is as important as their correctness. Working in groups on homework and to study is encouraged! However, your submitted homework should be written up individually, in your own words, and without consulting anyone else's written solutions of any form.

Exams: The dates for the exams (all in-class) are:

- Midterm, Wednesday March 6, during class.
- The final exam is [set by UF](#) for Tuesday April 30, during Group D (3:00-5:00pm).

Academic Policies and Integrity: UF students are bound by The Honor Pledge which states, "*We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code.*" On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "*On my honor, I have neither given nor received unauthorized aid in doing this assignment.*" The [Conduct Code](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. If you have any questions or concerns, please consult with the instructor.

Attendance and make-up work: Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies>.

Accommodations: Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center (DRC): <https://disability.ufl.edu/get-started>. Please share your accommodation letter with the instructor and discuss your access needs as early as possible in the semester.

Grade points: Information on current UF grading policies for assigning grade points is available at <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies>.

Course evaluation: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.ua.ufl.edu/students>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl>.

Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results>.

Health and wellness:

- U Matter, We Care: If you or someone you know is in distress, please contact umatterufl.edu, 352-392-1575, or visit the [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.
- Counseling and Wellness Center: Visit the [Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.
- Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the [Student Health Care Center website](#).

Academic resources:

- E-learning technical support: Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at helpdeskuf1.edu.
- [Career Connections Center](#): Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- [Library Support](#): Various ways to receive assistance with respect to using the libraries or finding resources.
- [Teaching Center](#): Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.