

MTG 4302/5316: Elements of/Introduction to Topology 1

University of Florida, Department of Mathematics

Course Syllabus, Fall 2017

Instructor: Peter Bubenik

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Class meetings: MWF 6th period (12:50–1:40pm), Little Hall Room 125

Prerequisites: MAS 4105 with a minimum grade of C, or permission from instructor.

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

Final exam. Wed Dec 13, 12:30–2:30pm, Little Hall 125

Tentative test dates. Fri Sept 22, Fri Oct 27, in class

Course description. In this course we will learn the basic concepts and examples of general topology. Topology provides a general setting for studying continuous mathematics, and is a foundation for much of pure and applied mathematics. We will start with the basics of set theory and then introduce topological spaces and continuous functions. We will study notions of connectedness, compactness, countability and separation. We will also study metric spaces and function spaces, and the notion of completeness.

Course schedule.

Weeks 1–2	Set Theory and Logic
Weeks 3–6	Topological Spaces and Continuous Functions
Weeks 7–9	Connectedness and Compactness
Weeks 9–12	Countability and Separation Axioms
Weeks 13–15	Complete Metric Spaces and Function Spaces

Course objectives. By the end of this course, you will have learned how take the time and effort to learn some sophisticated mathematical concepts, how to use them in proofs, how to write proofs and how to present your work. This course will prepare you for graduate work in the mathematical sciences and for working in technical and quantitative jobs in industry.

Expectations.

- You will read the relevant notes ahead of class and use available resources (classmates, the textbook, the lectures, and internet resources) to learn the necessary concepts.
- You will come to class with a list of concepts that you didn't fully understand and questions that you have.
- You will be prepared to explain what you have learned.

Course work and assessment. The grading for the course will be based on homework and homework presentations 20%, and two tests, 20% each, and a final exam, 40%.

Grading scheme. A: 100% – 90%, A-: 89% – 85%, B+: 84% – 80%, B: 79% – 75%, B-: 74% – 70%, C+: 69% – 65%, C: 64% – 60%, D+: 59% – 57%, D: 56% – 54%, D-: 53% – 50%, E: 49% – 0%.

Homework. The best way to learn mathematics is to do mathematics. The textbook contains many good exercises and I will regularly assign a selection of these as well as my own problems. You are encouraged to discuss the exercises with your classmates, but you must write up your own solutions. Copying solutions or allowing your solutions to be copied is considered cheating. If you are unable to do any of the homework ask me for help as soon as possible. Solutions to some of the homework problems can be found on the web. Do not use these! It is considered cheating and you are depriving yourself of the crucial opportunity to learn by struggling with these problems.

Students will also be expected to present their homework solutions to the class. Being able to verbally explain your mathematical work is a vital skill. We will work together to fix up any arguments that are incorrect or unclear.

Additional resources. Wikipedia has good articles on many of the topics covered in this course.

Class demeanor. Students are expected to arrive to class on time and behave in a manner that is respectful to the instructor and to fellow students. Please avoid the use of cell phones and restrict eating to outside of the classroom. Other students should be respected in discussion.

Attendance. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

Disabilities statement. Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <http://www.dso.ufl.edu/drc/>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Academic honesty. 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 Honor Code (<https://sccr.dso.ufl.edu/students/student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor.

Course evaluation. Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

Grade points. For current UF grading policies for assigning grade points see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx> and <http://gradcatalog.ufl.edu/content.php?catoid=8&navoid=1493&hl=grade+points&returnto=search#grades>.

Student complaint process. See https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf

Campus resources.**Health and wellness.**

- U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352 392- 1575 so that a team member can reach out to the student.
- Counseling and Wellness Center: <http://www.counseling.ufl.edu>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.
- Sexual Assault Recovery Services (SARS) Student Health Care Center, 392-1161.
- University Police Department, 392-1111 (or 9-1-1 for emergencies). <http://www.police.ufl.edu/>

Academic resources.

- E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. <https://lss.at.ufl.edu/help.shtml>.
- Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. <http://www.crc.ufl.edu/>
- Library Support, <http://cms.uflib.ufl.edu/ask>. Various ways to receive assistance with respect to using the libraries or finding resources.