



Fall 2020, Topology 1

MTG 4302 section 3279 and MTG 5316 section 3280

Instructor: Louis Block

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This course is a synchronous class, with meetings (using Zoom) Monday, Wednesday, and Friday, period 6 (12:50 – 1:40 PM). It carries 3 credits and entails 3 contact hours. We will use Canvas.

To protect student privacy, I will not record class meetings.

Prerequisite: MAS 4105 with a minimum grade of C.

It is expected that students taking this course have had some exposure to abstract mathematics, and are able to write mathematical proofs.

Office Hours:

I will be available via Zoom, Monday, Wednesday, and Friday, period 8, for questions or discussions. If you want to meet with me during that time period, send me an email and I will set up a Zoom meeting. If you want to meet with me, but you can not meet during that time period, send me an email and let me know when you are available to meet. I will try to set up a Zoom meeting.

Required Text:

Title: Topology (second edition)

Author: James R. Munkres

Publisher: Prentice Hall

Year: 2000

Course Description:

This course is the first course in a two course sequence. In this sequence we present a rigorous mathematical treatment of the fundamental ideas of topology. Topics in this course include the following:

1. Set theory. Sets, functions, index sets, Cartesian products, finite and infinite sets, cardinality, Cantor-Schroeder-Bernstein Theorem. (two weeks)
2. Definitions and examples of topology, basis, open and closed sets, interior, boundary, closure. Continuous maps, homeomorphism. The subspace topology, quotient spaces, product spaces. Metric topology. Complete metric spaces. The contracting mapping theorem. Baire category theorem. Separation axioms. Normal spaces. Tietze Extension Theorem. (five weeks)
3. Function spaces and their topologies. (two weeks)
4. Connectedness. Connectedness in the real line, path-connectedness, components, local connectivity. (two weeks)
5. Compactness. Covers, finite intersection property. Sequential compactness. Compactness in the real line and in Euclidean spaces. (three weeks)

Grades:

Grades will be based on seven assigned problem sets. The first two problem sets will be worth 25 points each, and the five other problem sets will be worth 30 points each. So there are 200 possible points. No exams will be given. Grades will be assigned according to the following:

A: 180-200	A-: 175-179	B+: 170-174	B: 160-169	B-: 155-159
C+: 150-154	C: 140-149	C-: 135-139	D+: 130-134	D: 120-129

Scores on the assignments will be based mostly on the correctness and completeness of your solutions. However, I will also consider the clarity, coherence, and organization of your written work. You should submit your work on Canvas (either typed or neatly hand written).

Additional Information and Links:

Grades: Grading will be in accord with the UF policy stated at <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Honor Code: "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](#) 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 in this class."

Class 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>."

Accommodations for Students with Disabilities: “Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://disability.ufl.edu/https://disability.ufl.edu/>) 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.”

Online Evaluations: “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/>.”

Contact information for the Counseling and Wellness Center: <https://counseling.ufl.edu/>, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Supplementary note: The Mathematics Department is committed to diversity and inclusion of all students. We acknowledge, respect, and value the diverse nature, background and perspective of students and believe that it furthers academic achievements.

It is our intent to present materials and activities that are respectful of diversity: race, color, creed, gender, gender identity, sexual orientation, age, religious status, national origin, ethnicity, disability, socioeconomic status, and any other distinguishing qualities.

