

Campbellsville University  
MTH 440-01  
Topology

TEXTBOOK: Introduction to Topology 3<sup>rd</sup> ed. by Mendelson

INSTRUCTOR: Chris Bullock

OFFICE: CH 314

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OFFICE HOURS: MWF 12-2 and TR 11-12:15 or by appointment

1. DESCRIPTION OF COURSE: Included in this course will be topics on the history of modern mathematics, the study of sets, functions, relations, metric spaces, compactness, connectedness, and topological spaces. Prerequisite: MTH 310. Students must have upper division standing.
2. COURSE OBJECTIVES: The primary objective of this course is for students to understand the concepts of theorem and proof. In this course, the study of sets, functions, relations, metric spaces, compactness, connectedness, and topological spaces will be explored. Students will demonstrate the ability to construct logical arguments and to communicate effectively using mathematical language. Students will gain an understanding of the historical development of point set topology. This course will also equip students for further study of advanced mathematics.
3. COURSE OUTLINE: Topics to be covered include:
  - Chapter 1: Set Theory, Union, Intersection, Complement, Products, Functions, Relations
  - Chapter 2: Metric Spaces, Continuity, Open and Closed Sets
  - Chapter 3: Topological Spaces, Neighborhoods, Closure, Interior, Boundary, Homeomorphisms, Subspaces, Product Spaces
  - Chapter 4: Connectedness
  - Chapter 5: Compactness, Compact Metric Spaces, Compact Topological Spaces
4. EVALUATION: There will be a total of four tests including a final exam. Each test will be worth 100 points. Also, there will be a homework grade worth 100 points. Thus, there will be a total of 500 attainable points in this class. The grading scale will be the usual grading scale:

90-100% A  
80-89% B  
70-79% C  
60-69% D  
0-59% F

The percentage of earned points out of the total points will be recorded for each assignment. At the end of the semester, these homework grades will be averaged to get the final 100-point homework grade. This grade will then be averaged with the four test grades to obtain the final grade for the class.

5. REQUIREMENTS: The tentative dates for the exams are as follows:

Exam #1: Jan 30

Exam #2: Feb 27

Exam #3: Apr 3

Final: May 1 from 11-12:30

6. ATTENDANCE: Campbellsville University has an attendance policy which states that a student who misses two weeks worth of a class (for any reason) receives a warning. Thus, any student missing 4 class periods in this class will receive a warning. Any student who misses four weeks worth of a class (for any reason) is automatically withdrawn from the class with a failing grade. Thus, any student missing 8 class periods in this class will be withdrawn from the class. PLEASE NOTE THAT, BY THIS POLICY, ANY ABSENCE COUNTS, WHETHER EXCUSED OR UNEXCUSED.

Attendance will be recorded by me every class period at the beginning of class. If you are late for class, you will be counted as absent.

You must notify me in advance if you are going to miss a test. You may contact me by phone or by e-mail. Make-up exams are possible if I am notified in advance and if I think the excuse is reasonable.

7. DISABILITIES: Campbellsville University is committed to reasonable accommodations for students who have documented physical and learning disabilities, as well as medical and emotional conditions. If you have a documented disability or condition of this nature, you may be eligible for disability services. Documentation must be from a licensed professional and current in terms of assessment. Please contact the Coordinator of Disability Services at 270-789-5192 to inquire about services.

8. ADDITIONAL SOURCES:

Introduction to topology / Crump W. Baker.

Undergraduate topology [by] Robert H. Kasriel.

9. EMERGENCY PHONE NUMBERS:

Security Cell Phone: 270-403-3611

Security Office Phone: 270-789-5556