

MATH 351 – Point Set Topology
Dr. Boersma
Winter 2021

Goals: In this course we will be exploring the subject of point-set topology as we continue to develop our proof writing skills and our overall mathematical maturity. We will work carefully with definitions, explore and construct examples, and prove theorems. Along the way we will learn the definition of a “topology”, work with continuous maps and homeomorphisms, encounter metric spaces, and touch on the notion of compactness.

It is important to understand that this is an upper-level, abstract mathematics course. Unlike some of your previous mathematics classes, like calculus and differential equations, there is not much focus on computation and “getting the right answer”. Instead we care more about the detailed study of certain examples and the ability to abstract those properties which appear fundamental to the overall structure into well-worded definitions. From these definitions we will be able to build up our knowledge base in the form of theorems. Reading, understanding, and creating proofs of theorems is essential to an understanding of topology. The ability to communicate mathematics and mathematical truths will be the most essential skill needed for success in this course. Pay attention to detail – when reading the textbook and when turning in your own work.

Office: Samuelson 221-A, phone: 963-1395, email Stuart.Boersma@cwu.edu. Until further notice, I will not be holding regular office hours in person. Please see Canvas for information about getting a hold of me, office hours, etc.

Required

Text There is no textbook you need to buy for this course. After the first week of class, we will have access to one or more pdf files that will help us guide our learning of topology.

Your Grade: Your final grade in this course will depend on two exams (15%), collected homework (50%), Attendance and Participation (10%), and Daily Assignments (25%).

Exams The exams in this course will be oral exams. That means you will meet with me individually over Zoom and I will ask you a few questions about the current material. You must have computer access with a webcam to successfully complete the exams. More information about these exams will be given in class and on Canvas. If you anticipate any issues with technology, please contact me as soon as possible. The exams are scheduled for February 4 and March 17 (during finals week). I will contact you to schedule the exact time for your exam as we get closer to these dates.

Collected

Homework About once a week I will collect written assignments to grade. When you hand in a homework assignment, I will be looking for neat, clear, and concise solutions containing complete and eloquent explanations. You should think of these turn-in homework sets as an opportunity for you to really show me your understanding of the material. All homework should be typed in \TeX or \LaTeX . Homework will be due Saturday evenings. Homework turned in late **WILL NOT** receive full credit and may not be graded at all. I will drop your lowest weekly homework score before computing final grades.

Perfect

Proofs Occasionally, a proof from the regular homework assignment will be designated a “perfect proof” assignment. These assignments will require you to make revisions to your first draft based on my feedback until you have achieved (near) perfection. These assignments will be described in more detail in class. Due dates are important here! If you do not hand in revisions by the due date, you may not be allowed to continue to revise and perfect your proof.

Attendance

Live zoom sessions will be held Monday - Thursday, 11:00 - 11:50 am. This is an upper-level mathematics course. Thus, I will expect every student to make an effort to be “in class” at those times. I expect that many questions you might have will be addressed in class and I do not plan on repeating these explanations outside of class. You may miss three days without it affecting your attendance grade. Please let me know if a health problem forces you to miss too many classes.

Daily

Assignments This is a four-credit mathematics course. I will plan on having assignments due on most days Monday - Thursday. These assignment will typically have two parts: one part that may be based on finishing up some work from the last class, and one part that will help you prepare for our next class. These will be due at 10 a.m. and must be completed by the posted due date to receive full credit. I will primarily be grading these on completeness, but if I notice a lot of errors I may ask you to make a second attempt in order to receive full credit for the assignment. Additionally, these daily assignments will give me an opportunity to give you frequent personal feedback on your understanding of the material. Make sure you can read my comments that I post through Canvas. Even if you receive full credit, you may have some incorrect responses that I point out in the comment section. I will drop your lowest three Daily Assignment scores before computing final grades.

Final grades	Final grades will be assigned according to:	
	A :100% – 93	C+:79 – 77
	A-: 92 – 90	C :76 – 73
	B+:89 – 87	C-:72 – 70
	B :86 – 83	D+:69 – 67
	B-: 82 – 80	D :66 – 63
		D- :62 – 60

Students who have special needs or disabilities that may affect their ability to access information or material presented in this course are encouraged to contact me or Robert A. Campbell, Director, Disability Support Services, on campus at 509-963-2171 for additional disability-related educational accommodations.