

MATH 452 – Introduction to Topology
Dr. Boersma
Winter 2010

Goals: This course will provide you with a broad introduction to *topology*, one of the “younger fields of mathematics”. We will study those characteristics which remain invariant under continuous transformations. Continuing where we left off last Fall, we will finish up our study of basic knots by focusing on the Alexander and Jones polynomials. We will then turn our attention to surfaces, three-dimensional manifolds, and their topological invariants (most notably the Euler Characteristic). In addition, this course will emphasize *active learning* techniques. Students will read the text, explore the plethora of examples, and construct proofs using the notation and terminology of the discipline.

Office: Bouillon 108D, phone: 963-1395, email boersmas@cwu.edu. Office hours will be announced in class shortly. You may of course drop by anytime. If I’m not busy I’ll be glad to talk with you.

Required

Text *Topology NOW!*, by Robert Messer & Philip Straffin. We will cover chapters 2-4.

Your Grade: Your final grade in this course will depend on one three exams (40%), collected homework (30%), homework presentations (20%), reading assignments (5%), and attendance (5%).

Exams The exams are scheduled for January 29, February 24, and March 16 (noon). Note that the third exam is held during our scheduled final exam period. Make-up exams will only be given in extreme cases. If you anticipate a conflict, please see me at least one week **before** the date of the exam.

Collected

Homework I will periodically 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. Homework turned in late **WILL NOT** receive full credit and may not be graded at all. See the separate handout for a detailed list of expectations on written work.

Presented

Homework This quarter we will build on your presentation experience from last quarter. While primarily focusing on the mathematical content, this quarter will also allow you to practice your delivery: clear board work, motivation, correct use of mathematical notation, and complete yet concise solutions.

As before, everyone is expected to receive three presentation credits during the quarter. Individuals or teams may claim problems to present on a first-come first-served basis. Once you believe you are ready to present a solution, either hand in a written solution to me or stop by my office to walk me through your solution. Once I have approved your solution for presentation, we will agree on a date and time to present the solution to the class.

Other

Homework

Aside from graded and presented problems, many other homework problems will be assigned. Working on these problems will give you a chance to work with the new definitions, concepts, and theorems which will form the basis for the content in this course. If you find yourself having difficulty with any of these problems, you should let me know so we can discuss them either in class or in my office.

Attendance

This is a 400-level mathematics course. Thus, I will expect every student to make an effort to be in class (on time!) every day. Your attendance grade will be lowered for each absence starting with the third. Please let me know if a health problem forces you to miss too many classes.

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.