MATH 453 – Introduction to Topology
Dr. Boersma
Spring 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 Winter, we will finish up our study of surfaces by looking at the famous "coloring problem": How many colors are necessary and sufficient to color any map on a given surface. We will try to relate this coloring number to the Euler characteristic of the surface. We will conclude with a more formal treatment of such fundamental concepts as *topological space*, *compactness*, *connectedness*, and *quotient spaces*. 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 chapter 7 in addition to some material not found in the book.

Your Grade: Your final grade in this course will depend on two exams (40%) and collected homework problems (60%).

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.

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. Please let me know if a health problem forces you to miss too many classes.