

Contact Information: MNB 119, phone: 838-8869, email: behmarh@wou.edu. Email is the preferred method of communication.

Office Hours: M, T, W 9:00 - 10:00 AM; F 12:00 - 2:00 PM; or by appointment

Text: *Mathematical Proofs: A Transition to Advanced Mathematics, Third Edition* by Gary Chartrand, Albert Polimeni, Ping Zhang, Pearson Publishing

Objectives: This course is designed for students planning to be mathematics majors (or minors). It is a "bridge" course, bridging the foundational calculus sequence with more advanced proof-intensive mathematics courses. The goals for this course are for you to:

- examine some of the logic and set theoretic foundations of mathematics,
- learn how to read, analyze, and write mathematical proofs,
- understand more about the nature of mathematics and, particularly, the role of definitions and proof in mathematics,
- get comfortable with the idea of doing mathematics in a rigorous way,
- examine foundational theory of sets, functions, and relations.

Class Format: The class format is what is known in academia as *flipped classroom*. In that format, I have a pencast of the lecture posted on Moodle at least a day before the classtime. I expect you to watch the lecture and try some of the assigned problems. In the day of lecture, we will work on text problems in groups of three. After allotted time for groups to work on a problem, I call on students to come to the board and present their solutions. Each student is responsible for presenting several problems.

Attendance: Daily attendance is required for your success in this course. We will work on problems in class in groups and present our results. These activities are graded and they cannot be made up later. If you miss class, it is your responsibility to ask a classmate for notes on the material that you have missed.

Reading the Text: The textbook for our course is written in a student-friendly manner. Certain portions of the book will be assigned as reading assignment. It is a good idea to briefly read the assigned section before class and then to carefully read the section before you start your homework. It is also helpful to take careful and detailed notes on each of the assigned sections in the textbook. You may record all your questions as an integral part of your notes. Bring these questions for discussion in class.

Homework: Homework is where most of your learning will occur. There will be a variety of homework assignments given in this course, which are in three main categories:

- Text Problems Homework
- Writing Assignments

- In-class Activities

Text Problems will be assigned almost every day and will be discussed during the next class period. There are two categories for these problems: the problems that are assigned to be discussed as a group and then presented by one student, and the problems that are assigned for quizzes.

Writing Assignments: This course is a designated “writing intensive” course. That designation affects the course only slightly since it already involves much writing in the homework, as do most advanced math classes. As you might expect, the aim of this course is for you to become familiar with reading and WRITING conventional mathematical arguments. There will be several writing assignments.

In-class activities: You are responsible for reading the sections of the book that we are covering in this term in addition to watch the pencasts for those sections. As part of this preparation you should be prepared to present the assigned (by me) problems for the group discussions. It is important to be active in group discussions and make sure that you understand the problem and how to solve it. Each person will be called to board to present several assignments throughout the term.

Collaboration: Collaboration on quiz problems is acceptable, sometimes desirable. However, these assignments are intended for individual work. You should try them on your own in a quiet environment where you can concentrate. Try to understand the problem first before you try to solve it. Understanding the problem is 50% of solving that problem. Once you have tried all of the quiz problems on your own, you may consult with your peers on the questions that you’ve had difficulties. However, ultimately each student ought to understand every problem and be able to write her/his own solution in her/his own words during the quiz.

Exams & Quizzes: There are 7 quizzes for each friday of the term except the October 24, November 21 and 28. Two 50 minute exams will be given on October 24 and November 21. The final exam is on Monday, December 8 at 10 AM. There will be no makeup or early exams (including final) or quizzes.

Grading:

Presentations	15%
Writing Assignments	5%
Quizzes	20%
Exams	40% (20% each)
Final	20%

Grades will be assigned (roughly) according to the following scale (“+” and “-” will be determined later): 100%-90% = A, 89% - 80% = B, etc.

An Incomplete grade is reserved for students who are passing the course at the end of the seventh week but who have a documented (I may require documentation from you) emergency that prevents them from completing a portion of the course (e.g. the final exam or a project) in the last three weeks of the course.

Accommodations: If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the Office of Disability Services, APSC 405, or at 503-838-8250, as early as possible in the term. Students needing medical or mental health care can access the Student Health and Counseling Center by calling 503-838-8313, emailing at health@wou.edu, or by walking in to schedule an appointment.