Email Policy

Email is the official means of communication at Westminster College. Please feel free to contact me via email, but be sure that you email the correct Dr. Richardson! All messages received after 4:00PM may not be answered until the following day.

Prerequisite

This course has a co-requisite of MTH 361. Please see me if you do not satisfy this prerequisite.

Text

To be successful in this course, it is extremely important that you READ!. The required textbook is Introduction to Topology: Pure and Applied, by Colin Adams and Robert Franzosa. Please note that other textbooks and internet sources should not be used on homework in this course. It is imperative that you are doing your own work and not doing “literature searches” to find the answers to your homework problems. Presenting a solution found online as your own work is plagiarism. Thus, use of any other books, articles, web sites, tutors, solutions, etc. will be considered an academic integrity violation and will be handled according to the policy below.

Course Description:

Topology is a beautiful abstract theory of mathematics that extends notions of functions and equivalence in Euclidean geometry, calculus, and other familiar branches of mathematics to a more general setting. In this course, we will study sets called topological spaces, functions between spaces, properties of topological spaces such as connectedness and compactness, and “new” topological spaces, such as product and quotient spaces, created from “old” ones.

Dually, Math 481 will focus on mathematical abstraction and methods of proof. Great emphasis will be placed on mathematical writing in this course.
Student Learning Outcomes:

By the end of the semester, students must demonstrate the ability to

- Interpret and employ the appropriate vocabulary and notation used in topology.
- Accurately describe the fundamental theorems in topology covered in this course.
- Correctly apply theorems and definitions to prove new theorems and solve new problems.
- Construct proofs, including direct proofs, proofs by contradiction, proofs by contrapositive, and if-and-only-if proofs.

Attendance and Participation:

This course will be a collaborative learning experience. It is extremely important that you are not only present physically in class but that you are actively participating in all class activities. Our class time will be spent in a variety of ways. Each day, new material will be presented to the class, typically during the first half of class. The students will then break into small groups to work together on problems designed to deepen the understanding of this new material. These in-class problems often contain major results and ideas, so it is important to complete as many of them as possible, even if your group needs to finish them outside of class time. Each group may be asked to present a solution to one of the in-class problems during a future class period. Students will be graded on their active participation during each in-class problem session and on the correctness and completeness of the solutions they present. **Unless told otherwise, please turn off all cellular phones and other electronic devices during class.**

Homework:

Homework problems will be assigned after each class and may include both problems from the textbook as well as supplementary problems that I design for the course. Your homework assignments (and their due dates) will be posted on the course page on D2L in the “Content” section; be sure to check it often for updates. Homework should be written up neatly, and all appropriate work must be shown to receive credit. All problems will be collected for each assignment, but only selected problems will be graded each week. **The lowest two homework scores will be dropped; consequently, absolutely no homework will be accepted late.**

I encourage you to work together on your homework. You may collaborate on your homework assignments in groups of at most 3 and **submit one set of solutions for each group.** However, please be aware that all group members are responsible for understanding (and being able to reproduce) the solutions that are submitted! You will be tested on the material, and students who do not actively contribute to homework solutions typically do not perform well on exams.

Please note that you will have an assignment requiring you to attend events at the Undergraduate Research and Arts Celebration on Wednesday, April 18, 2018. Details on this assignment will be posted at a later date.
In addition to the problems I assign, I expect you to read the textbook as part of your daily assignment. Your textbook is a valuable resource, and you should follow along as we cover new material in class.

**Extra Credit:**

Extra credit problems will occasionally appear in your homework assignments. If an extra credit problem is given on a particular assignment, unless a separate due date is given, it must be turned in with the rest of the assignment on the posted due date.

**Project:**

Each student is expected to contribute to a group project. In groups of 2-3, you will explore a topic in topology that we did not cover in class and present your findings to the class during the final exam period, **Wednesday, May 9, 8:00-10:30am**. This project will require significant mathematical creativity, research skills, and independent learning. Your group will be evaluated on the mathematical content of the project, your ability to answer questions on the topic, and your presentation skills. Suggested project topics will be determined at a later date.

**Exams:**

There will be three written exams during the semester. The tentative dates of the midterm exams are as follows:

- Exam 1: Thursday, February 15
- Exam 2: Tuesday, March 27
- Exam 3: Thursday, May 3

Makeup exams may only be given if both Dr. Richardson and Dean McMinn approve the reason and alternative arrangements are made BEFORE the exam is given in class.

**Course Grades:**

Your course grade will be determined by the following distribution:

- Homework: 15%
- Participation & In-class Problems: 10%
- Exams: 20% each
- Project: 15%

The grading scale will be

- A+: 92-100
- A: 90-91
- B+: 88-89
- B: 82-87
- C+: 78-79
- C: 72-77
- D+: 68-69
- D: 62-67
- B-: 60-61
- C-: 70-71
- D-: 60-61
- F: 0-59
Academic Integrity:

*Central to the purpose and pursuit of any academic community is academic integrity. All members of the Westminster community, including students, faculty, staff, and administrators, are expected to maintain the highest standards of honesty and integrity, in keeping with the philosophy and mission of the College.*

Westminster College 2017-18 Undergraduate Catalog, p. 65

Some forms of academic dishonesty include (but are not limited to): copying a classmate’s work (homework, extra credit, or exams), divulging answers or information to another student during or about an exam, and using unauthorized aids (e.g., professors, textbooks, internet sites) on an assignment or exam. Please note that **presenting a solution found online as your own work is plagiarism.** Academic dishonesty will not be tolerated in this class. The penalty for academic dishonesty is a grade of 0 on the assignment. Any event of academic dishonesty is reported to the Dean of the College. Other details of violations and consequences are given in the Catalog.

Students with Disabilities:

Westminster College actively strives for the full inclusion of all our students. Students with disabilities who require access solutions for environmental or curricular barriers should contact Faith Craig, Director of Disability Resources, located in 209 Thompson-Clark Hall. You may reach her at 724-946-7192 or craigfa@westminster.edu. No accommodations can be given without documentation from the Disability Resources Office.

Important Dates:

1/23: Last Day to Add/Drop
2/15: Exam 1
3/3-3/11: Spring Break- No Classes
3/23: Withdrawal deadline
3/27: Exam 2
3/29-4/2: Easter Break - No Classes
4/3: Monday classes meet (on Tuesday)
4/18: URAC - attendance required
5/3: Exam 3
5/4: Classes End
5/9: Project Presentations