

PMATH 467/667 Algebraic Topology, Course Outline, Winter 2023

Course: PM 467/667, Algebraic Topology, MWF 11:30-12:20, room ML 349.

Instructor: Stephen New, office MC 5419, extension 45554, email snew@uwaterloo.ca

Office Hours: To be scheduled later.

Website: Course materials can be found at <https://www.math.uwaterloo.ca/~snew>.

Text: The required textbook is Algebraic Topology, by Allen Hatcher. It is available online at Allen Hatcher's website: <https://pi.math.cornell.edu/~hatcher>.

Course Outline: we will cover the following topics.

The classification of compact 2-dimensional manifolds (informal).

Chapter 0: Preliminaries

Chapter 1, Sections 1.1, 1.2, 1.3: The Fundamental Group

Chapter 2, Section 2.1 and perhaps 2.2: Homology and the Mayer-Vietoris Sequence

Assignments: there will be about six assignments, to be submitted using Crowdmark. Students may receive help from any source as long as the help is acknowledged. Your solutions must be written in your own words (not copied) and they must reflect your own understanding. Each student's lowest assignment mark will be dropped.

Tests: there will be a midterm test, to be scheduled later, and there will be a $2\frac{1}{2}$ hour final exam, which will cover all of the course material.

Course Mark: The final course grade G will be given by the maximum of

$$G = 30\%A + 30\%T + 40\%E \quad G = 15\%A + 15\%T + 70\%E$$

where A is the average of the assignment marks (with the lowest mark excluded), T is the mark on the midterm test, and E is the mark on the final exam. Graduate students will be required to do an additional project which will also contribute to the grade.

Persons with Disabilities: AccessAbility Services, located in Needles Hall, Room 1401, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with AccessAbility Services at the beginning of each academic term.

Academic Integrity: In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. [Check the Office of Academic Integrity for more information.]

Grievance: A student who believes that a decision affecting some aspect of their university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4. When in doubt, please be certain to contact the departments administrative assistant who will provide further assistance.

Discipline: A student is expected to know what constitutes academic integrity to avoid committing an academic offence, and to take responsibility for their actions. [Check the Office of Academic Integrity for more information.] A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about rules for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate associate dean. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline. For typical penalties, check Guidelines for the Assessment of Penalties.

Appeals: A decision made or penalty imposed under Policy 70, Student Petitions and Grievances (other than a petition) or Policy 71, Student Discipline may be appealed if there is a ground. A student who believes they have a ground for an appeal should refer to Policy 72, Student Appeals.