Math 634—Fall 2018—CRN 13827

Course Information

Instructor	Robert Lipshitz
e-mail	lipshitz@uoregon.edu
Office	Fenton 303
Office Hours	M 12:00–1:00, F 2:00–3:00 Subject to change.

Course Prerequisites	This course requires a firm understanding of the material from Math 531 (point-set topology) and Math 544 and 545 (abstract algebra, particularly groups, rings, and modules). This course is aimed at graduate students in the Mathematics Department, who should decide whether to take this or an alternative in consultation with their departmental advisors. Anyone else must obtain the instructor's permission to take this course.
Course Requirements	There will be written homework due roughly once a week, initially on Wednesdays. The first written homework assignment is due on Friday of the first week of classes. There will be an in-class midterm exam and an in-class final exam. There *will* be new material covered and a homework assignment due during dead week (the last week of classes).
Test Dates	*Midterm*: October 29. Subject to change if necessary. *Final exam*: per Registrar's schedule. Generally, there will *not* be makeup exams. If you are unable to attend the exam, contact me in advance to discuss whether other arrangements are possible. If you are unable to attend an exam because of an emergency, contact me as soon as possible; you will be asked to provide documentation of the emergency.
Grading Policy	Written Homework 35% Midterm 25% Final Exam 40% Late homework will typically not be accepted.
Students with disabilities	The University of Oregon is committed to an inclusive learning environment. If you have a disability which may impact your performance on exams, please contact the Accessible Education Center to discuss appropriate accommodations. If there are other disability-related barriers to your participation in the course, please either discuss them with me directly or consult with the Accessible Education Center.

Course Policies:

- Cell phones, computers, etc. are not permitted in this class except by instructor's permission. (They don't bother me, but there is strong evidence they distract other students.)
- Students are expected to read the sections in the textbook *before* they are covered in class.
- Electronics, notes and the textbook are not permitted on exams.
- Written homework must be turned in at the beginning of class on the due date. (If you can't make it to class, put it in the mailbox in Fenton before class.)
- You are welcome to work on the homework together, but you must write up your final answers by yourself. Failure to abide by this policy constitutes cheating.
- Any resources you use when solving homework problems, other than the textbooks, must be cited in your homework. You may not use electronic resources (e.g., Google) other than the textbook and recommended textbook. Failure to follow this policy constitutes cheating; if you are caught cheating on the homework you will receive a 0 for the homework portion of the class and will be reported to the administration. Failure to cite sources constitutes academic misconduct.

Course Resources:

- Textbook: *Algebraic Topology*, second edition, by Allan Hatcher. Available for download from the author's website.
- We will use Canvas to track grades and post some solutions.
- Course website, with up to date syllabus and assignments:

  `http://pages.uoregon.edu/lipshitz/Teaching/Fa18Ma634.html`

  or [QR code] or `https://goo.gl/SGa9QF`

Getting Help: I have office hours every week. Get help as soon as you feel confused. See the course webpage for additional advice.

Course goals: The main goals of this course (learning outcomes) are:

- Work with the notions of homotopy and homotopy equivalence, and be able to prove maps are homotopic and spaces are homotopy equivalent.
- Be able to construct and prove properties of CW complexes.
- Understand and be able to compute the fundamental group and use it for topological applications.
- Understand and apply the definition, fundamental lifting theorem, and classification theorem for covering spaces.
- Be able to define and compute simplicial and singular homology and cohomology and prove their basic properties.