

MATH 663—ALGEBRAIC TOPOLOGY—FALL 2021-A. FREIRE

MWF 11:45—12:35, Ayres 112 (in person)

Office hours: W 3:30—4:30 (Ayres 325), or by appointment (email)

1. Goal: Singular homology (cellular homology, simplicial homology), de Rham cohomology, duality on manifolds. Intended both for students interested in research in Topology or Differential Geometry and for students in other areas who want to learn the foundations of the subject.
2. Prerequisites: Math 561-562 (general topology, manifolds, fundamental group), or equivalent.
3. TEXTS: Algebraic Topology, by Allen Hatcher (Cambridge)
Differential Forms in Algebraic Topology, by R. Bott and L. Tu (Springer)
See also:
Topology and Geometry, by Glen Bredon (Springer)
An introduction to Algebraic Topology, by Joseph Rotman (Springer)
A Comprehensive Introduction to Differential Geometry, by Michael Spivak (vol. 1)
4. For the material discussed in a given lecture, plans for upcoming lectures and problem sets, please consult the “course log” on this web page. Canvas will not be the primary means of communication.
5. GRADING: attendance, participation in lecture and careful reading of the texts are expected. The course grade will be based on student presentations to the class (of a series of problems or a topic in the course.) Two 25-min presentations per student.
6. **COVID-19 related policies:**
 - a) please review the information, instructions and policies found here:
<https://www.utk.edu/coronavirus/>
 - b) mask use is mandatory at all times, please see here:
<https://www.utk.edu/coronavirus/guides/requirement-to-wear-face-coverings>
 - c) Please choose your seats so as to maximize pairwise distance.
 - d) At the moment, no recording of lectures or synchronous Zoom attendance are contemplated.