MATH 664—ALGEBRAIC TOPOLOGY—SPRING 2021-A. FREIRE
MWF 11:45—12:35, Ayres 114 (in person, at least initially)
Office hours: W 1:00—2:00 (Ayres 207), or by appointment (email)

1. Goals:
   PART I: Homotopy groups, connections with cohomology
   PART II: characteristic classes, obstruction theory (esp. Stiefel's thm and existence of spin structures on manifolds.)
   PART III: cohomology operations, Steenrod problem, cobordism (cf. Thom 1954)

2. Prerequisites: Math 663 (basic homology and cohomology-cp. [Hatcher] ch 2,3)

3. TEXTS: Algebraic Topology, by Allen Hatcher (Cambridge), ch. 4
   Homotopical Topology, by A. Fomenko and D. Fuchs (Springer)
   Characteristic Classes, by J. Milnor and J.Stasheff (Princeton)
   See also:
   The Topology of Fibre Bundles, by N. Steenrod (Princeton)
   Differential Forms in Algebraic Topology, by R. Bott and L. Tu (Springer)
   Topology and Geometry, by Glen Bredon (Springer)

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. There will be a small number of short problem sets, with written solutions to be brought to an interview with the instructor.

6. **COVID-19 related policies:**

   a) please review the information, instructions and policies found here:
   https://www.utk.edu/coronavirus/
   b) mask use is strongly encouraged for everyone's safety, 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.
   e) If needed, the lectures may shift to distance modality (Zoom) on short notice.