MTH 961 - Course Syllabus - Spring 2022

Instructor: The instructor for the course is Teena Gerhardt (teena@math.msu.edu).

Class Meetings: This class meets Tuesdays and Thursdays, 10:20-11:40am Eastern Time. As per university guidelines, at least the first three weeks of class will be online, via Zoom. The Zoom information is:

LINK: ********
PASSWORD: *******

Later in the semester, depending on public health conditions and university guidance, we will likely switch to in-person meetings. Our classroom will be Wells Hall A322.

Any last minute changes to course modality will be announced via email and on D2L.

Office Hours: Office hours will be by appointment. Please reach out via email to schedule a time to meet! At least for the first few weeks of the semester, office hours will be held online. Depending on public health conditions, later in the semester it may be the case that office hour meetings can be scheduled for either in-person or online.

Textbook: We won't follow any one book very closely, but here are some resources that could be useful:

Hatcher, *Algebraic Topology* – Available for free here:
https://pi.math.cornell.edu/~hatcher/AT/AT.pdf
Chapter 4

May, *A Concise Course in Algebra Topology* – Available for free here:
https://www.math.uchicago.edu/~may/CONCISE/ConciseRevised.pdf

Hatcher, *Spectral Sequences* (an unpublished 5th chapter to the *Algebraic Topology* book). Available here:
https://pi.math.cornell.edu/~hatcher/AT/ATch5.pdf

Mosher and Tangora, *Cohomology Operations and Applications in Homotopy Theory*

Technology: This course requires internet access as well as access to Zoom and D2L.

Course Website: The course site is hosted on D2L (https://d2l.msu.edu). For students who miss one of the synchronous course meetings, class notes and/or videos will be posted on the D2L site.

Course Description: This is a third course in Algebraic Topology. The course will cover topics including stable homotopy groups, spectra, representability, spectral sequences, and cohomology operations.

Homework/Exams: There will be some suggested problems throughout the semester, but these will not be collected or graded. There will be no exams in this course.

Presentations: Each student will make a roughly 30-minute presentation to the class at some point during the semester, on a topic related to the material in the course. A list of potential presentation topics will be posted on D2L (and will be expanded throughout the semester), although if you have topic ideas that are not on the list please feel free to suggest them. Please aim to pick a presentation topic by March 15th, so that we can schedule the presentations. If you would like to present earlier in the semester, that can also be arranged.

Course recordings: Online meetings of this course will be recorded. The recordings will be available via D2L to students registered for this class. Recordings may not be reproduced, shared with those not in the class, or uploaded to other online environments.