WISCONSIN
UNIVERSITY OF WISCONSIN–MADISON

Math 752, Introductory Topology II
Number of Credits: 3 credits
Course URL: www.math.wisc.edu/~kent/Math752.Spring.2018.html

Course Designation or Attributes: None

Meeting Time and Location: TR 1-2:15 in Van Vleck B325

Instructional Mode: Face to face

Credit hours: The three credit hours are met by two 75-minute meetings and a minimum of two hours of out of class student work per week for 15 weeks.

INSTRUCTOR:
Autumn Kent
Office hours and location: R 2:30-3:30, by appointment, and open door, Van Vleck Hall 615

Email: kent@math.wisc.edu

OFFICIAL COURSE DESCRIPTION
The course is a continuation of Math 751 covering fundamental topics in algebraic topology. Core topics covered are: cohomology, cup product, Poincaré duality, higher homotopy group, Hurewicz Theorem, Whitehead's Theorem, fiber bundles.

Requisites
Math 751.

LEARNING OUTCOMES

At the end of this course students should be able to:

- compute the cohomology from a cell structure
- use effectively the fundamental tools of cohomology, reduced cohomology, the long exact sequence of a pair, excision, and the Mayer-Vietoris sequence
- apply the Universal Coefficient Theorem in computations
- distinguish spaces using the cohomology ring
- make effective use of Poincaré duality
- make elementary computations of homotopy groups using the Hurewicz Theorem and covering spaces
- make effective use of Whitehead's Theorem
- recognize and construct fiber bundles
- make homotopy calculations using the long exact sequence of a fibration

Textbook and Software
- Algebraic Topology by Allen Hatcher

GRADING

There will be a take-home midterm, a take-home final, and biweekly homework assignments.

Students will receive an A if, based on the performance on the exams and homework, I believe that you are able to pass the department qualifying exam in topology. In the past, this has correlated roughly to a performance of 70% clear and correct responses on assignments.

A student will receive a B if they work and it is evident that they will not pass the qualifying exam.

A student doing little to no work will receive an F.

EXAMS

The due dates for the exams are March 13th and May 10th, respectively. The exams will be similar to problems given on the departmental qualifying exams.

HOMEWORK & OTHER ASSIGNMENTS
- Homework: There will be biweekly homework assignments. You are encouraged to discuss the problems with your classmates, however, the final write-up should be yours.

RULES, RIGHTS & RESPONSIBILITIES
- See the Guide's to Rules, Rights and Responsibilities.

ACADEMIC INTEGRITY
By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison's community of scholars in which everyone's academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review. For more information, refer to https://conduct.students.wisc.edu/academic-integrity/.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES
McBurney Disability Resource Center syllabus statement: "The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA." http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php

DIVERSITY & INCLUSION
Institutional statement on diversity: "Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.

The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world." https://diversity.wisc.edu/