

# MAT 762 - Algebraic Topology

**Instructor:** Stephan Wehrli, 304B Carnegie, smwehrli@syr.edu

The course is a continuation of MAT 761 and will cover Chapter 3 of the textbook and parts of Chapter 4. Specifically, the course will cover the following topics:

- Definition of cohomology (singular, simplicial, and cellular)
- Universal Coefficient Theorem
- Properties of cohomology
- Cup product
- Cohomology of product spaces
- Cap product
- Orientations on manifolds
- Poincaré duality, intersection product, Alexander duality
- Smooth manifolds
- Higher homotopy groups
- Additional topics depending on time and interest

More information can be found below:

- **Text:** *Algebraic Topology*, by Allen Hatcher, Cambridge University Press, 2001.
- **Classes:** TuTh 9:30 - 10:50 AM, 109 Carnegie
- **Office Hours:** TuTh 3:10 - 4:10 PM and by appointment. I have an open door policy for short to medium questions.
- **Course Webpage:** <https://smwehrli.expressions.syr.edu/teaching/mat-762-fall-2019/>
- **Homework:** Regular homework will be assigned and collected in class. You may discuss the homework problems with your classmates, but the work you turn in should be your own, in your own words.
- **Students with disabilities:** If you believe that you need academic adjustments (accommodations) for a disability, please contact the Office of Disability Services (ODS), <http://disabilityservices.syr.edu>, located in Room 309 of 804 University Avenue, or call (315) 443-4498 or TDD: (315) 443-1371 for an appointment to discuss your needs and the process for requesting academic adjustments. ODS is responsible for coordinating disability-related academic adjustments and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since academic adjustments may require early planning and generally are not provided retroactively, please contact ODS as soon as possible.
- **Academic Integrity:** Syracuse University's Academic Integrity Policy reflects the high value that we, as a university community, place on honesty in academic work. The policy

defines our expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course-specific expectations, as well as about university-wide academic integrity expectations. The policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same work in more than one class without receiving written authorization in advance from both instructors. Under the policy, students found in violation are subject to grade sanctions determined by the course instructor and non-grade sanctions determined by the School or College where the course is offered as described in the Violation and Sanction Classification Rubric. SU students are required to read an online summary of the University's academic integrity expectations and provide an electronic signature agreeing to abide by them twice a year during pre-term check-in on MySlice. The Violation and Sanction Classification Rubric establishes recommended guidelines for the determination of grade penalties by faculty and instructors, while also giving them discretion to select the grade penalty they believe most suitable, including course failure, regardless of violation level. Any established violation in this course may result in course failure regardless of violation level. For more information and the complete policy, see <http://class.syr.edu/academic-integrity/>

- **Religious observances policy:** Syracuse University's Religious Observances Policy recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holy days according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors no later than the end of the second week of classes. For fall and spring semesters, an online notification process is available through MySlice (Student Services -> Enrollment -> My Religious Observances) from the first day of class until the end of the second week of class.