Stony Brook University
Mathematics Department
Oleg Viro

Topology and Geometry
MAT 364/MAT 529
Fall 2023

Syllabus

Course description: A broadly based introduction to topology and geometry, the mathematical theories of shape, form, and rigid structure. Topics include intuitive knot theory, lattices and tilings, non-Euclidean geometry, smooth curves and surfaces in Euclidean 3-space, open sets and continuity, combinatorial and algebraic invariants of spaces, higher dimensional spaces. This course is offered as both MAT 364 and MAT 529.

Credits: 3.

Instructor: Oleg Viro. e-mail: oleg.viro@stonybrook.edu,
office hours: Tu - Th 7:00-8:00pm by Zoom
https://stonybrook.zoom.us/j/4456472936 , or by appointment.

Grader: Mohammad Rabah
e-mail: Mohammad.Rabah@stonybrook.edu,
office hours: Tu 2:30pm-3:30pm,
Math Learning Center hours: (in Math Tower S-235 or online) Tu-Th 10:30am-11:30am.

Lectures: Tu-Th 10:00-11:20am in Physics P127.

Brightspace. All course information (besides homework) will be posted to the Brightspace. Check Announcements and Content there regularly!

Textbook: Colin Adams, Robert Franzosa, Introduction to Topology: Pure and Applied.

This is a required text. It will not be covered, and sometimes we'll be doing things in a different order, but it discusses key notions in a lot of detail and offers more examples that we can cover in class. You should read this book when you are doing homework or preparing for exams and quizzes.

Quizzes will be taken in class. The main goal of quizzes is to make sure that students are aware of definitions and statements of theorems. It will be conducted through Gradescope.

Homework will be assigned weekly through **Gradescope**. You are encouraged to discuss the homework problems with others, but your write-up must be your own work. Suspiciously similar papers won't be graded.

Homework should be submitted to Gradescope according to the Gradescope rules. Incorrect submission format will lead to a grade reduction. Please sign up for Gradescope (https://www.gradescope.com) using **Entry Code** YDEP8E

Late homework won't be accepted. Homework in the form of e-mail won't be accepted.

You are responsible for the MAT 200 / MAT 250 material on sets and functions. This includes using terminology and notation correctly. The notation used in the textbook (such as unions and intersections of sets, the empty set, images, preimages, composition of functions, etc) is the standard notation in mathematics. The same notation is used in MAT 200 and MAT 250 and in other math courses at Stony Brook. Some of you may

have seen different notation elsewhere (for example, in courses on computer science); in this course, you must understand and use the standard notation accepted in mathematics.

Exams: two midterms and final exam on Thursday December 21, 8:00am-10:45am in our usual classroom Physics P127. Missing any of the exams without any serious and documented reason will result to failure in the course.

Grading system: your grade for the course will be based on: homeworks 10%, quizes 15%, the first midterm 20%, the second midterm 20%, and the final exam 35%. The final grade is the maximum of the score for final exam and the total grade calculated according to the scheme discribed above.

☞ All your work should be done by you and nobody else. Submitting somebody's else work is a serious violation of university integrity policy and will be treated respectively. See Academic integrity statement below.

Student Accessibility Support Center (SASC) statement: If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact SASC (631) 632-6748 or http://studentaffairs.stonybrook.edu/dss/. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential. Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and SASC. For procedures and information go to the following website:
http://www.stonybrook.edu/ehs/fire/disabilities/asp.

Academic integrity statement: Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instance of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/uaa/academicjudiciary

Critical incident management: Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, and/or inhibits students' ability to learn.

Student Absences Statement: Students are expected to attend every class, report for examinations and submit major graded coursework as scheduled. If a student is unable to attend lecture(s), report for any exams or complete major graded coursework as scheduled due to extenuating circumstances, the student must contact the instructor as soon as possible. Students may be requested to provide documentation to support their absence and/or may be referred to the Student Support Team for assistance. Students will be provided reasonable accommodations for missed exams, assignments or projects due to significant illness, tragedy or other personal emergencies. In the instance of missed lectures or recitations, the student is responsible for review posted slides, recorded lectures, and notes. Please note, all students must follow Stony Brook, local, state and Centers for Disease Control and Prevention (CDC) guidelines to reduce the risk of transmission of COVID. For questions or more information click here:
https://www.stonybrook.edu/commcms/comingback/students.php