MAT 530 – TOPOLOGY, GEOMETRY 1: FALL 2018

Course Description

This course is divided into two parts, the first of which is an introduction to *point set topology*; this is an attempt to study the notions of "closeness" and "continuity" and "spaces" using only set theory. In the second part of this course we add some algebra to point set topology and end up with an introduction to *algebraic topology*. The main algebraic ingredient we will study is the *fundamental groups* of a space. Two tools we will develop in order to understand this group are: The Seifert-van Kampen Theorem and the theory of covering spaces.

Course Teachers

Lowell Jones is teaching Lecture 01, which meets on Mondays and Wednesdays 10am-11:20am Mathematics 4-130; contact at lejones@math.stonybrook.edu, or at 632-8248; office is room 2-111 in math building; office hours TBA.

Mu Zhao is our grader for the course; contact at muzhao@math.stonybrook.edu; office is room 2-106 in the math building; office hours TBA.

Text

Topology, second edition, by James R Munkres.

Homework

The homework assignment for any given week can be found by going to the "Calendar" on the Blackboard website for the lecture (viewed in monthly form) and clicking on the first class day of the appropriate week. For example, the first homework assignment can be found by going to August 27, 2018, and clicking on "HW 1 and topics". Problem sets will be assigned each week. Each homework set is due during the recitation class of the week following the assignment (unless otherwise stipulated). For example HW 1 will not be due on 9/3 (since there is no class on that day), but rather HW 1 will be due on 9/5. HW 2 will be due on 9/10, HW 3 will be due on 9/17, etc.

Exams

There is one inclass midterm on Wednesday October 10, 2018.

The final exam will take place on Wednesday ,December 19 , 2:15pm-4:45pm. (Room assignment for the final exam will be announced on this website towards end of semester.)

If you register for this course you must make sure that you have no schedule conflicts with the times of the midterm and final exam. Makeup exams will only be given in the event that circumstances beyond the student's control do not allow the student to take the exams at the assigned times; if this happens to you then contact your lecturer as soon as possible. **In particular, "schedule conflicts", such as having another exam scheduled at the same time as your mat530 exam, are not reasons for a makeup to be given.**

Grading

Homework=30%

Midterm =30%

Final exam =40%

Americans with Disibilities Act:

If you have a physical, psychological, medical or learning disability that may impact on your abiltiy to carry out assigned course work, please contact Disabiltiy Support Services (DSS) at 631-632-6748. The DSS will review your concerns and determine, with you, what accommodations are necessary and appropriate. All information and documentation is confidential.

Academic Integrity:

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 instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity see the academic judiciary web site 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 University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the saftey of the learning environment, or inhibits students' ability to learn. Further information about most academic matters can be found in the undergraduate Bulletin.

Approximate Schedule for Mat 530

The weekly homework assignements will be posted on the course calendar of our blackboard website.

Week of 8/27-8/31: cover sections 12-17.

Week of 9/3-9/7: cover sections 18-21; class only on Wednesday.

Week of 9/10-9/14: cover sections 22-27.

Week of 9/17-9/21: cover sections 28,29,37.

Week of 9/24-9/28: cover sections 30-33.

Week of 10/1-10/5: cover sections 34-36.

Week of 10/8-10/12: inclass mideterm on Wednesday 10/12; no class on Monday 10/8.

Week of 10/15-10/19: cover sections 43,45-47.

Week of 10/22-10/26: cover sections 47,51-52.

Week of 10/29-11/2: cover sections 53-54.

Week of 11/5-11/9: cover sections 55-56,58-59.

Week of 11/12-11/16: cover sections 60,68-70.

Week of 11/19-11/23: cover sections 70-71; class only on Monday.

Week of 11/26-11/30: cover sections 72-74.

Week of 12/3-12/7: cover sections 79-82.

Week of 12/10-12/14: cover sections 79-82; last class of semester is Monday December 10.