Algebraic Topology (MA 2410)
Tu Th 10:30 - 11:50, Room: Kassar House 105
http://www.math.brown.edu/∼maloni/Brown_en/MA_2410.html

Instructor: *Sara Maloni*
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Office Hours: Fri 9:00 - 10:00 or by appointment.

Textbook: Allen Hatcher, *Algebraic Topology*, Cambridge University Press, 2002.

Course Outline: The course will cover Chapters 0 - 1 - 2 of the book. After a brief review of the notion of homotopy, cell complexes, and homotopy extension properties, the class will be divided in two part: fundamental group and homology. The first part is about fundamental group and includes the definition, the calculation of the fundamental group of the circle, Van Kampen's theorem and its applications. We will also discuss covering spaces and their classification, and deck transformations and group actions. The second part will deal with the notion of (singular) homology. After we define it and compute some easy examples, we will describe the Homotopy Invariance Theorem, the notion of exact sequences and excision, Mayer-Vietoris sequences, and the homology with coefficients.

Grading: The final grade will be computed by: Participation in Class and Grading of Homework (30%), Homework (35%) and Final project (35%).

Just to give you an idea what to expect: the cutoff point for A is usually about 85% , the score below 55% usually means failing. Other factors such as: effort, attitude, and improvement over time may figure into your final grade. I may also assign a less weight to a single exam grade that is out of line with the others.

Collaboration: You are encouraged to discuss homework with other students, but to gain a greater understanding of the material you must wrestle with the problems alone in the beginning, and *write your solutions independently* and with your own words at the end.

Homework: Homeworks will be posted every Tuesday at 10am and are due on Tuesday at 10:30am (in class). Your lowest homework score will be dropped. The following rules will be strictly enforced:

1. Write your *name* clearly at the top of every page.
2. Put the problems *in order*, indicating clearly what you have skipped.
3. Write *neatly*. If your homework is too messy, a grader may chose not to grade it.
4. *Staple* your homework. Paperclips, folded corners, etc. are not acceptable.
5. Turn in assignments **in time**. No late homework will be accepted.
6. Remember that any material that you copy or paraphrase from a book, the web, a classmate, a professor, etc should be correctly cited. If you are unsure how to do this correctly, please ask me in person or via email. For a relevant discussion of what constitutes *plagiarism* please consult: http://library.brown.edu/libweb/plagiarism.php.

Online Forum: This term we will be using Piazza for class discussion. The system is highly catered to getting you help fast and efficiently from classmates, the TA, and myself. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. If you have any problems or feedback for the developers, email team@piazza.com.

Find our class page at: https://piazza.com/brown/fall2015/math2410/home

Academic Honesty: As a Brown University student, you are bound to the standards of academic honesty put forth by the Brown Academic code:
http://www.brown.edu/Administration/Dean_of_the_College/curriculum/academic_code.php.

Grade Policy: As part of your evaluation, you will be required to grade the homework of all the students for one week, and to provide written solutions. Time permitted, I will ask you to show some of the most important exercises to the class.

Grade disputes (errors or appeals) for individual assignments or exams are not allowed beyond the week after the assignment or exam has been returned.

Questions and comments: Mathematical questions are appreciated any time. Please tell me in person, or via email, about any comments you have, and about any errors on this website, or made (by me!) in class.

Notes: Taking good notes is essential for advanced mathematical classes, in particular for this class. While I like the textbook a lot, I will often explain things a bit differently. Even when I follow the textbook, you will see that the blackboard presentation is quite different from a printed page. Lectures and the textbook will augment each other, so it is essential to get good notes.

Attendance: Attending every class is strongly encouraged. If you miss a class, it is your responsibility to obtain the class notes as well as to learn any announcements made during the class from other students. I would not penalize you for non-attendance, but I suggest you to come to class every time unless you are seriously ill.

Remember: office hours are not replacements for missing classes!

Participation in class: I think that, sometimes, following a proof of a new theorem can be hard, above all if it is the first time one sees it. Therefore I might ask "your assistance" to prove the results, in the following sense. I will tell you in advance the material that will be covered in the next lectures (so that you can study it before the class), and during the classes I might ask your input to prove some of the results. That will be part of your final evaluation.

Special assistance: Students who need accommodation services due to a disability should contact Student and Employee Accessibility Services (at SEAS@brown.edu or 401-863-9588) first to discuss their needs. If this applies to you, please make arrangements and obtain documentation in a timely manner.