TOPOLOGY II

MTH 516/616, SEMESTER 2, 2018-2019

Course Information

- **Instructor:** Dr. Sanjay Kumar Singh <sanjayks@iiserb.ac.in>
- **Office:** 210, Academic Building 1.
- **Email:** sanjayks@iiserb.ac.in.
- **Webpage:** http://home.iiserb.ac.in/∼sanjayks.
- **Office Hour:** Wednesday $5.00 - 6.00$ PM. If you cannot come during my office hours please send me an email to make an appointment.

This is an advanced course in Topology. Familiarity with topological spaces, covering spaces, and the fundamental group will be assumed, as well as comfort with the structure of finitely generated modules over a PID.

Syllabus: The official Course Syllabus is as given in the Course Contents booklet

$$https://acad.iiserb.ac.in/cc/mth516.php$$

Textbook: There is no fix text book for this course. I will try do most of the topics from Spanier.

Reference books:

- **Spanier, Edwin H.** Algebraic Topology. Springer, 2008. ISBN: 9780387944265.
- Bredon, Glen E. Topology and Geometry. Springer-Verlag Berlin and Heidelberg GmbH and Company, 1993. ISBN: 9783540979265.
- Joseph J. Rotman, An Introduction to Algebraic Topology, Graduate Texts in Mathematics (Book 119).
- C. R. F. Maunder, Algebraic topology. Dover Publications (June 14, 1996. ISBN-10: 0486691314, ISBN-13: 978-0486691312.
- M. A. Armstrong, Basic Topology, Springer.
- Brayton Gray, Homotopy Theory: An Introduction to Algebraic Topology.
- Steenrod, N. and Eilenberg, S.: Foundations of Algebraic Topology, Princeton University Press.
- John Harper, Marvin Greenberg, Algebraic Topology: A First Course (Mathematics Lecture Note Series).
- Shastri, Anant R. Basic Algebraic Topology. Chapman and Hall / CRC, 2013. ISBN: 9781466562431.
- Davis, James F., and Paul Kirk. Lecture Notes in Algebraic Topology (Graduate Studies in Mathematics, 35). American Mathematical Society, 2001. ISBN: 9780821821602.

- Dold, Albrecht. Lectures on Algebraic Topology (Grundlehren Der Mathematischen Wissenschaften Series). Springer-Verlag, 1980. ISBN: 9780387103693. (Wonderful technique)
- Hatcher, Allen. Algebraic Topology. Cambridge University Press, 2001. ISBN: 9780521791601.
- May, J. Peter. A Concise Course in Algebraic Topology (Chicago Lectures in Mathematics Series). University of Chicago Press, 1999. ISBN: 9780226511832.
- Munkres, James R. Elements of Algebraic Topology. Addison Wesley Publishing Company, 1984. ISBN: 9780201045864.
- Vick, James W. Homology Theory: An Introduction to Algebraic Topology. Academic Press, 1973. ISBN: 9780127212500.

Assignment. There will be 4 assignment in this course. The homework assigments will be posted on the course webpage.

You are encouraged to work together on assignment problems, but **everyone has to write up the solutions independently**. Please order the pages and staple the pages. Unreadable homework will not be corrected. No late homework will be accepted.

Home work and class exercise. In every class you will get some home work which you don't need to submit. You can discuss it in office hours. They will be very important for examination.

Grading Policy:

- Final Semester Exam: 40%
- Mid Semester Exam: 30%
- Quiz: 10%
- Weightage for other components (surprize quizzes/assignments/attendance/class presentation etc.) 20%.

Quiz: There will be one planned quiz and two surprise quizess in the semester.

*. In case of any further questions regarding the course, please send me an email.