

INTRODUCTION TO ALGEBRAIC TOPOLOGY

MTH 507, SEMESTER 2, 2017-2018

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 a first course in algebraic topology. The subject revolves around finding and computing invariants associated with topological spaces. The first such invariant is the fundamental group of a pointed topological space which we'll study in detail along with the classification of covering spaces using fundamental group actions.

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

[http : //acad.iiserb.ac.in/cc/mth507.php](http://acad.iiserb.ac.in/cc/mth507.php)

Textbook:

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Reference books:

- J. R. Munkres, Topology (2nd Edition), Pearson Publishing Inc, 2000
- Hatcher, Algebraic Topology, Cambridge University Press, 2002
- M. A. Armstrong, Basic Topology, Springer International Edition, 2004
- W. S. Massey, Algebraic Topology: An Introduction , Springer, 1977
- J. J. Rotman, An Introduction to Algebraic Topology, Springer, 1988
- M. J. Greenberg and J. R. Harper, Algebraic Topology: A First Course, Perseus Books Publishing, 1981
- E. H. Spanier, Algebraic Topology, Springer, 1994

Assignment. There will be 4 assignment in this course. The homework assignments 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.

Grading Policy:

- Final Semester Exam: 50%
- Mid Semester Exam: 30%
- Quiz: 10%
- Weightage for other components (surprise quizzes/assignments/attendance/class presentation etc.) 10%.

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

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