

MATH 190B SYLLABUS

SPRING 2025

Lectures	MWF 10-10:50, APM 5402
Instructor	James M ^c Kernan, APM 6260, phone (858)-534-6347
Office Hours	M 1:00-3:00PM
	or by appointment, if you cannot make these times.
Teaching Assistant	Zhiyuan Jiang, z5jiang@ucsd.edu
Sections	T 4:00-4:40pm, HSS 4025
Office Hours	T 3-4, W 3-4, HSS 3062
Text	See web site for some suggestions.
Exams, Final	Monday June 9th, 8:00am-11:00am, APM 5402.
Midterms	Friday April 25th, Friday May 16th.
Grading	Homework 30%, Midterms 30%, Final 40%.
Syllabus	An introduction to the fundamental group: homotopy and path homotopy, homotopy equivalence, basic calculations of fundamental groups, fundamental group of the circle and applications (for instance to retractions and fixed-point theorems), van Kampen's theorem, covering spaces, universal covers. Examples of all of the above. Instructor may choose further topics such as deck transformations and the Galois correspondence, basic homology, compact surfaces.
Prerequisites	Math 190A, or the consent of the instructor.
Academic Honesty	Academic dishonesty is considered a serious offense at UCSD. Students caught cheating will face an administrative sanction which may include suspension or expulsion from the University. It is in your best interest to maintain your academic integrity.
Homework	Homework will be assigned on the website every Monday.

It will be due one week later every Wednesday at 11:59pm, via Gradescope. Late problem sets are **not accepted**, however the lowest problem set score will be dropped.

At the top of every of each assignment should appear

- (1) Your name.
- (2) Your section leader's last name.
- (3) Your section time.
- (4) Either the text "Sources consulted: none" or a list of all sources consulted other than the main textbook, supplementary notes, and your own notes from lecture and section. This is *required*. (Examples of things that should be listed if used: office hours, names of study group partners, Wikipedia, ChatGPT etc.)

You should not expect to be able to solve every single problem on your own; instead you are encouraged to discuss questions with each other or to come to office hours. If you meet with a study group, you may find it helpful to do as many problems as you can on your own beforehand. But write-ups must be done independently. (In practice, this means that it is OK for other people to explain their solutions to you, but you must not be looking at other people's solutions as you write your own.) Use examples in the book as a model for the level of detail expected. Write in complete sentences whenever reasonable. If you have questions about the homework, it is best to ask these in office hours.