

MATH 224 : COMPLEX ANALYSIS

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<https://math.iisc.ac.in/~bharali/teaching.htm>

THIS IS THE LAST TIME THAT A HANDOUT WILL BE PASSED OUT IN HARD-COPY!

All future announcements/assignments will be posted on the course webpage.

Books recommended for this course:

- Lars V. Ahlfors, *Complex Analysis*, 3rd Edition, McGraw-Hill, 1978/79.
- John B. Conway, *Functions of One Complex Variable*, 2nd Edition, Springer-Verlag (also available in a Narosa imprint), 1978.
- Elias M. Stein and Rami Shakarchi, *Complex Analysis*, Princeton University Press, 2003.

Course summary: This course is intended to be a first course on the theory of functions in one complex variable, and the focus will be on studying *holomorphic functions*. Essentially, we shall study the topics presented in chapters III through VII and Chapter XII of Conway's book, although our treatment might differ (sometimes quite a bit) from that of Conway's. We will pick and choose the special topics in Chapter VII—and cover this chapter in its entirety only if time permits.

The importance of homework: During the course of the lectures, I shall indicate various problems—which will include aspects of the proofs of theorems presented in class—for you to work on. These, plus other problems will be compiled into assignments. It is **essential** for your understanding of the subject that you work on these problems. Also, the more problems on the subject that you work on, the better (the recommended books form an excellent source of problems).

On **most** weeks, a new assignment will be posted on the course webpage by **11:59 p.m. either on Thursday or on Friday**. You will not be asked to submit homework assignments. Instead, assignments will form the material for **quizzes** that shall be given during the tutorials. The problems on each quiz will be drawn from the most recent assignment that has been up on the course webpage for at least 5 days.

Tutorials: This course, being a (3:1) course, has **mandatory** tutorials. Apart from the many roles that a tutorial serves, and which you are familiar with, quizzes will be given during the tutorials. These quizzes will be **unannounced**.

Teaching assistants & tutorial hours: TO BE ANNOUNCED (watch the course webpage)

Assessment: Your assessment will be based on:

Mid-semester exam: 30% or 25%, Quizzes: 20% or 25%, Final exam: 50%,

where the relative weights of the mid-term exam and the quizzes will be finalised some time after the mid-semester exam has been graded.

Examinations: The mid-semester exam will be held at a time that will be decided in class; the final exam will be according to the Institute final-examination calendar.