

# MA5360 – COMPLEX ANALYSIS

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<https://bit.ly/ma5360>

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**THIS IS THE LAST HANDOUT YOU WILL RECEIVE IN HARD-COPY! AS SOON AS POSSIBLE PLEASE SEND AN EMAIL TO THE ADDRESS AT THE TOP OF THE PAGE WITH SUBJECT AS MA5360.**

**About the course.** This is a first course in Complex Analysis targeted at first-year postgraduate students who have had no prior exposure to the subject. I will spend a considerable amount of time on the fundamentals of the theory and will strive to make the course as self-contained as possible. However, I expect the students to have a thorough grounding in Real Analysis in both one and several variables.

The primary emphasis of the course will be on **geometric intuition** and **problem solving**. Complex Analysis has deep and profound connections with geometry and topology and the lectures will focus on understanding these connections. Trying to understand Mathematics by simply sitting for a lecture or reading from a book is like trying to learn how to drive a car by watching a F1 race! I plan to spend at least a few lectures on problem solving. I will also periodically post assignments on the course website.

**References.** The material I cover in the course is very classical and standard. You may refer to any of the many excellent textbooks such as

*Complex Analysis* by Theodore Gamelin, Springer.

*Complex Analysis* by Elias M. Stein and Rami Shakarchi, Overseas Press.

*Functions of One Complex Variable I* by John B. Conway, Springer.

However, I shall not be following any one textbook. Your primary reference material will be the notes you take in class. Therefore, it is vital that you do not miss any of the lectures!

**Assignments.** You will be required to solve assignments as part of your grading. You are expected to solve *every single problem* though you will be asked to turn in only a subset for evaluation. You are always welcome to discuss the problem with me. You are also allowed to freely discuss the problems with your classmates but the **solutions you turn in must be written entirely by you and not COPIED!** If you used assistance in solving a problem, you are required to mention the name of the person/s who helped you next to the question when you turn in the assignment. There will be no penalty for discussing solutions. I take academic integrity very seriously and I shall deal with academic dishonesty in the strictest possible manner.

**Office hours.** If you have questions or want to discuss the assignment problems, you are free to meet me on Mondays, Wednesdays and Fridays between 2 and 3 PM in my office (HSB 245A).

**Evaluation.** You will be evaluated based on your performance in the assignments, two quizzes and the final exam. As per institute norms, you are expected to spend approximately **seven hours** a week outside the classroom on this course. The assignments, quizzes and exams will be designed keeping this in mind.