MA5360 – COMPLEX ANALYSIS
Jan – May 2016

Jaikrishnan Janardhanan Indian Institute of Technology Madras
jaikrishnan@iitm.ac.in https://goo.gl/8B3z7v

THIS IS THE LAST HANDOUT YOU WILL RECEIVE IN HARD-COPY!
Please check the course website periodically for announcements, assignments, lecture notes and other handouts related to this course. You can access the course website from the link at the top of this page.

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.

Syllabus. I shall post a detailed list of topics to be covered on the course website in about a months time.

References. Your primary reference material will be the notes you take in class. I shall also periodically post some lecture notes on the course website but they are not intended to be a complete reference but rather just supplementary material. I shall closely follow the following textbook:

Complex Analysis by Joaquim Bruna, Julià Cufí, Hindusthan Book Agency.

I recommended that you purchase this book. However, the material I cover in the course is very classical and you may refer to any of the many excellent textbooks such as

Complex Analysis by Theodore Gamelin, Springer.
Complex Function Theory, 2nd Edition by Donald Sarason, Hindustan Book Agency.
Visual Complex Analysis by Tristan Needham, Clarendon Press.

Assignments. You will 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.

Evaluation. The grading for this course will be very flexible. You will be evaluated based on your performance in the assignments, two quizzes and the final exam. I shall adjust the weights for the these parameters at the end of the course so as to maximize your grade. My advice is to not worry too much about the grade. Focus on understanding and enjoying the coursework and the grade will take care of itself.