Department of Mathematics
Indian Institute of Technology Bombay
Powai, Mumbai–400 076, INDIA.

MA 205

Autumn 2018

Instructor:

B. K. Das,
202-A, Department of Mathematics.

1   Website

For course materials and updates please check "moodle", an online interface for the course. This should become functional in the first week of classes.

Syllabus

- Definition and properties of analytic functions.

- Cauchy-Riemann equations, harmonic functions.

- Power series and their properties.

- Elementary functions.

- Cauchys theorem and its applications.

- Taylor series ans Laurent expansions.

- Residues and the Cauchy residue formula.

- Evaluation of improper integrals.

- Conformal mappings.

- Inversion of Laplace transforms.

Texts/References

1. R. V. Churchill and J. W. Brown, Complex variables and applications (7th Edition), McGraw-Hill (2003).

2. J. M. Howie, Complex analysis, Springer-Verlag (2004).

3. M. J. Ablowitz and A. S. Fokas, Complex Variables- Introduction and Applications, Cambridge University Press, 1998 (Indian Edition).

4. E. Kreyszig, Advanced engineering mathematics (8th Edition), John Wiley (1999).

Advance References

1. Lars Ahlfors - Complex Analysis.

2. John Conway - Functions of a Complex Variable.

3. Serge Lang - Complex Analysis.

Policy on Attendance

Attendance is **not** compulsory for this course. However, you are encouraged to attend lectures as well as tutorial sessions. If you are absent due to medical reasons for a quiz or exam, you will need a certificate from the IIT hospital confirming that you were unwell on the relevant day(s).

Evaluation Plan

A quiz of 15 marks will be held. (15 marks)

Final exam (35 marks).

The exact dates of the quize and the final exam will be announced in class and will be uploaded on the moodle.