

Semester	JAN 2022
Open to semester	6,8,12
Course code	MT3214
Course title	Complex Analysis
Credits	4 /
Course Coordinator & participating faculty (if any)	Kaneenika Sinha
Nature of Course	Lectures
Pre-requisites	Real Analysis I
Objectives (goals, type of students for whom useful, outcome etc)	This course aims at a detailed study of functions of complex variables. What does it mean for such a function to be differentiable? What are the power series of a differentiable function? How do we integrate functions of complex variables? We study such questions; this subject is a foundational pillar of mathematics.
Course contents (details of topics /sections with no. of lectures for each)	Complex differentiation, Cauchy Riemann equations, power series, exponentials and logarithms, complex line integrals, Cauchy's integral theorem, power series, zeros of an analytic function, singularities, residue theorem, argument principle, maximum modulus principle, Schwarz lemma, conformal mappings, linear fractional transformations
Evaluation /assessment	End-Sem Examination-40% Mid-Sem Examination-40% Others-20 % (4 Class tests)%
Suggested readings (with full list of authors, publisher, year, edn etc.)	1. Functions of one complex variable, John Conway, Graduate Texts in Mathematics, Springer 2. Complex Analysis, L. Ahlfors, McGraw Hill 3. Complex Analysis (Princeton Lectures in Analysis), E. M. Stein and R. Shakarchi, Princeton University Press