MA 3676 - Complex Variables II

Text: Complex Variables and Applications, Sixth Edition, by J. W. Brown and R. V. Churchill.

Course Description: The theory of complex variables and its applications. The topics covered will include:

Week 1-3	Chapter 7	Applications of residues, evaluation of integrals using residues, integration along a branch cut, argument principle and Rouche's theorem, inverse Laplace transforms.
Week 4-6	Chapter 8	Mapping by elementary functions, linear transformations, linear fractional transformations, mappings of the upper half plane, exponential and logarithmic transformations, the transformation $w = \sin z$, square roots of polynomials.
Week 7-8	Chapter 9	Conformal mapping, preservation of angles, harmonic conjugates, transformations of harmonic functions, transformations of boundary conditions.
Week 9-11	Chapter 10	Applications of conformal mapping, steady temperatures and related problems, two-dimensional °uid °ow and related problems. Selected topics on Poisson integral formula, boundary value problems.

Kw 5/99