DEPARTMENT OF MATHEMATICS,

UNIVERSITY OF KARACHI,

Course Outline

MATH 502: ANALYSIS - II

Course contents:

Line and surface integrals. Theorems of Gauss, Green and Stokes and their applications. Uniform and absolute convergence of sequences and series of functions. Uniform convergence and continuity. Term by term differentiation and integration. Improper integrals and their convergence; their absolute and uniform convergence. Functions of a complex variable. Analytic functions; power series, Cauchy's Theorem and integral formulas. Singularities and branch points. Taylor's and Laurent series. Resident theorem and contour integrations conformal mapping.

Books Recommended:

1. Apostol, T. M., Mathematical Analysis, Addison Wesley, 1978.
2. Kaplan, W., Advanced Calculus, Addison Wesley, 1965.
3. Rudin, W., Principles of Mathematical Analysis, Mc Graw Hill, 1976.
4. Taylor, A. E. and Mann, W. R., Advanced Calculus, C/m Wiley, New York, 1983.

5. Churchil, R. V., Complex Variables and Applications, Mc Graw Hill, 2005.

6. Paliouras, F. B., Complex Variables, Collier McMillan, New York, 1975.

7. Pennesi, L.L., Elements of Complex Variables, Holt, Rinechart and Winston,

New York, 1967,

8. Mathews, J. H., and Howell, R. W., Complex Analysis for Mathematics and Engineering, Fifth Edition, Jones and Bartlett Publishers, Boston, 2006

9. Jeffrey, A., Complex Analysis and Application, Second Edition, Chapman and Hall/CRC, New York, 2006

10. Sharma, S. C., Complex Integration, First Edition, Discovery Publishing House, New Delhi, 2007.