Syllabus

MA224 Real Analysis [3-0-0-6]

January – April 2018

Prerequisites: Nill

Real Analysis: Metrics and norms - metric spaces, normed vector spaces, convergence in metric spaces, completeness; Functions of several variables - differentiability, chain rule, Taylor's theorem, inverse function theorem, implicit function theorem; Lebesgue measure and integral - sigma-algebra of sets, measure space, Lebesgue measure, measurable functions, Lebesgue integral, dominated convergence theorem, monotone convergence theorem, L-p spaces.

Textbooks/ References:

1. J. E. Marsden and M. J. Hoffman, Elementary Classical Analysis, 2nd Ed., W. H. Freeman, 1993.
2. M. Capinski and E. Kopp, Measure, Integral and Probability, 2nd Ed., Springer, 2007.
3. N. L. Carothers, Real Analysis, Cambridge University Press, 2000.
4. G. de Barra, Measure Theory and Integration, New Age International, 1981.
5. R. C. Buck, Advanced Calculus, Waveland Press Incorporated, 2003.
6. S. Kumaresan, Topology of Metric spaces, 2nd Ed., Narosa Publishing House, 2011.