MA 702: Analysis (3-0-0: 3)

Norms and metrics: Metric spaces, convergence of sequences, completeness, connectedness and sequential compactness; Continuity and uniform continuity; sequences and series of functions, uniform convergence, equicontinuity, Ascoli's theorem, Weierstrass approximation theorem.

Calculus of functions of several real variables: Partial and directional derivatives, differentiability, Chain Rule, Taylor's theorem, Maxima and Minima, Lagrange multipliers, Inverse function theorem, Implicit function theorem.

Multiple Integration: Fubini's Theorem, Line integrals, Surface integrals, Green, Gauss and Stokes theorems..

Text Books and References:
1. W. Rudin, Principles of Mathematical Analysis, 3rd Edition, McGraw Hill, 1976
2. T. M. Apostol, Mathematical Analysis, 2nd Edition, Narosa Book Distributors, 2002.

3. P. M. Fitzpatrick, Advanced Calculus, 2nd Edition, AMS, Indian Edition, 2010