

MTH 407 MATHEMATICAL METHODS: (3 Units) (L30: PO: T 15)

Calculus of variation: Lagrange's functional and associated density. Necessary condition for a weak relative extremum. Hamilton's principles. Lagrange's equations and geodesic problems. The Du Bois-Raymond equation and corner conditions. Variable end-points and related theorems. Sufficient conditions for a minimum. Isoperimetric problems. Variational integral transforms. Laplace, Fourier and Hankel transforms. Complex variable methods convolution theorems. Application to solution of differential equations. MTH -201, 301, 405, 406.