**MA\*722 Classical Mechanics**

Dynamical systems, generalized coordinates, degrees of freedom, holonomic andnon-holonomic systems, Lagranges equations for holonomic systems, Lagranges equation for impulsive forces and for systems involving dissipatative forces, conservation theorems, Hamiltons principle and principle of least action, Hamiltons canonical equations, canonical transformation with different generating functions, Lagrange and Poisson brackets and their

properties, Hamilton-Jacobi equations and separation of variables, Euler-Lagrange equations and its generalizations, degenerate Euler equations, natural boundary conditions, transversality conditions, extremals with corners, isoperimetric problem.

**References:**

1. Barndorff-Nielsen, O.E. and Cox, D.R. Inference and Asymptotics. Chapman and Hall, London, 1994
2. Casella, G. and Berger, R.L. Statistical Inference. Wadsworth publishing Co., Belmont, CA, 2002
3. Cox, D.R. Principles of Statistical Inference. Cambridge University Press, Cambridge, 2006
4. R.J.Freund, W.J. Wilson and D.L Mohr, Statistical Methods, , (Ed 3) Elsevier, 2010