SUBJECT NO-AE31010, SUBJECT NAME- VISCOUS FLOW THEORY

LTP- 3-1-0,CRD- 4

SYLLABUS :-

Prerequisites: AE21001

3 - 1 - 0: 4 CreditsReview of incompressible and compressible viscous flow equations of motion, vorticity transport equation and Vorticity dynamics; Low and High Reynolds number flows; Separated flows and wakes; Laminar and Turbulent Flows; Boundary-layer flows, Transition process and prediction; Turbulent stresses and heat transfer; Equilibrium, entrainment and lag in boundary layer flows; First and second-order boundary layer theory; Differential and integral methods of solution; Viscous-Inviscid interaction; Direct, inverse and semi-inverse coupling.Books:G K Batchelor, An Introduction to Fluid Dynamics, Cambridge University PressF M White, Viscous Fluid Flow, McGraw-Hill InternationalH Schlichting, Boundary Layer Theory, McGraw-HillS Goldstein, Modern Developments in Fluid Dynamics â Vol. 1 and 2, Oxford University Press