

Texts**Required:**

“Mechanics”, L.D. Landau, E.M. Lifshitz

“Theoretical Mechanics of Particles and Continua”, A. Fetter and D. Walecka

Strongly Recommended:

“Physical Kinetics”, E.M. Lifshitz and L. Pitaevski

References**I.) Fluids**

- a.) L.D. Landau and E.M. Lifshitz; “Fluid Mechanics”
- b.) G.K. Batchelor; “Introduction to Fluid Dynamics”
- c.) S. Chandrasekhar; “Hydrodynamic and Hydromagnetic Stability”

II.) Nonlinear Oscillations and Waves

- a.) G.B. Whitham; “Linear and Nonlinear Waves”
- b.) J. Lighthill; “Waves in Fluids”
- c.) L.D. Landau and E.M. Lifshitz, “Electrodynamics of Continuous Media”

III.) Rigid Body Dynamics

- a.) L.D. Landau and E.M. Lifshitz; “Mechanics”
- b.) H. Goldstein; “Classical Mechanics”
- c.) E. Whittaker; “A Treatise on the Analytical Dynamics of Particles and Rigid Bodies”

IV.) Noisy Dynamics

- a.) N. Wax; “Selected Papers on Noise and Stochastic Processes”
- b.) L.D. Landau and E.M. Lifshitz; “Statistical Physics, Vol. I”
- c.) E.M. Lifshitz and L. Pitaevski; “Physical Kinetics”
- d.) R. Serra, et al.; “Introduction to the Physics of Complex Systems”
- e.) L.P. Kadanoff; “Statistical Physics”
- f.) N.G. Van Kampen, “Stochastic Processes in Physics and Chemistry”

V.) Hamiltonian Chaos

- a.) M. Tabor; “Chaos and Integrability in Nonlinear Dynamics”
- b.) A.J. Lichtenberg and M. Leiberman; “Regular and Chaotic Dynamics”
- c.) E. Ott, “Chaos in Dynamical Systems”