

**Course Name:**

Random vibration of structural systems

**Course Number:**

20156

**Credit:**

3

**Course Content (outline):**

1. Random Processes, Probability, and Statistics
2. Analysis of Stochastic Processes (Stationary, Ergodic, Gaussian, ...)
3. Models of Random Excitations
4. Structures with Single-Degree-of-Freedom (SDOF)
5. Response of Linear MDOF Systems; multiple inputs and outputs
6. Time Domain and Frequency Domain Analyses
7. Review of Error Estimation
8. Introduction to Signal Processing
9. Design of structures for Random Excitations
10. Basics of Nonlinear Random Vibration