Prestressed Concrete (3-1-0)

Module I

Prestressing system, materials and codes: Basic concept, Losses of prestress, analysis of prestress and bending stresses. Need for high strength steel and concrete. Advantages and applications.
Pre-tensioning and post tensioning systems.

Module – II

Design of beams : Analysis and design of section for bending and shear, pressure line, concept of load balancing, cracking moment, bending of cables, limit state analysis and design, anchorage zone stresses, design of end block, Application to bridges.

Module –III

Selection of prestress concrete members, short term and long term deflections of uncracked members.

Module –IV

Flexural strength of prestresed concrete sections
Continuous beams, Design concept concordancy of cables, Secondary design consideration. Design pre-tensioned and post tensioned beam

Reference Books:

1. Prestressed Concrete, Raju,N.K., Tata McGraw Hill
2. Prestressed Concrete, T. Y. Lin