

**PCI7D002            DESIGN OF ADVANCED CONCRETE STRUCTURES    4-0-0**

Module-I (10 Hours)

Introduction to EQ Engineering: Cyclic behavior of concrete and reinforcement, Computation of earthquake forces on building frame using Seismic Coefficient Method as per IS 1893-2002, base shear and storey shear calculation for multi-storeyed building frames

Significance of ductility, ductility of beam, design and detailing for ductility, simple problems based on above concept as per IS 13920.

Module-II (10 Hours)

Retaining walls: Forces acting on retaining wall, Stability requirement, Design of Cantilever and Counterfort Retaining walls

Module-III (10 Hours)

Introduction: classification and components of a standard bridge, economical span, location of piers and abutments, vertical clearance above HFL, scour depth and choice of bridge type.

Standard Loadings for Road Bridges, Impact effect and impact factor calculation for RCC and steel bridges

Design of single vent rectangular slab culvert

Module-IV (10 Hours)

Design of Foundations: Design of Rectangular and Trapezoidal Combined footing

Text Books/Reference Books:

1. Limit state design- A K Jain, Nem Chand and Brothers
2. Limit state design of reinforced concrete by B.C. Punmia, AK Jain and A.K. Jain, Laxmi

Publishers New Delhi

3. Design of Bridge Structures, by T. R. Jagadeesh, PHI.