

**Course Name:**

Advanced concrete structures

**Course Number:**

20236

**Credit:**

3

**Course Content (outline):**

- Concrete behavior under multi- dimensional stresses
- Ductility of concrete structures
- Final deformations and element- flexibility of structures
- Final deformations and element- flexibility flexural and compressive members
- Calculation of  $M - \delta$
- Stiffness and flexibility of frames
- Design for seismic loading
- Moment distribution
- Plastic design
- Design and analysis of shear walls
- Concrete slab analysis
- Calculation of column capacities under bi- axial moment
- Methods of strengthening of concrete structures