Name of Faculty: Prof. Rashid Mustafa
Discipline: Civil Engineering (6th Semester)
Subject: Design of concrete structure-I (011617)
Course Credit : 03

Course Objective	To introduce the students to the fundamentals of reinforced concrete design with emphasis on the design of rectangular, T and L beams, short and long columns, and footings. In addition, student will learn how to analyze and design reinforced concrete structural members under bending, shear according to IS: 456-2000
Subject Synopsis/ Indicative Syllabus	**Introduction to the design of concrete structure:** Working stress and limit state analysis **Design of beam for flexure :** Limit state of collapse-flexure, design of rectangular, T and L beam, design of singly reinforced beam, design of doubly reinforced beam(Working stress & limit state method) **Bond, Shear and Torsion** **One and two- way slabs:** Flat slabs, Ribbed slabs **Axially and eccentrically loaded columns:** Design of short and long column, isolated and combined footing
Gate Syllabus of Design of concrete structure	Concrete - constituents, mix design, **s**hort-term and long-term properties; Working stress, Limit state and Ultimate load design concepts; Design of beams, slabs, columns; Bond and development length; Pre-stressed concrete; Analysis of beam sections at transfer and service loads.
Reading List and References	**Recommended Text** Reinforced concrete design by S Unnikrishna Pillai and Devdas Menon Reinforced concrete limit state design by Ashok K. Jain IS: 456-2000 "Code of Practice of Plain and Reinforced Concrete" **References** Sinha S.N "Reinforced concrete design". Tata McGraw Hill New Delhi Dayaratnam P "Design of Reinforced concrete structure". Oxford IBM publication, New Delhi