



3rd YEAR	
DESIGN OF CONCRETE STRUCTURES	
CO1	To develop basic understanding of reinforced concrete as a construction material.
CO2	To develop understanding of various design philosophies and their differences.
CO3	To understand behaviour of RCC beams.
CO4	To understand behaviour of RCC members under flexural shear.
CO5	To understand behaviour of compression members.
CO6	To understand behaviour of one –way and two-way slabs using moment coefficient.
ADVANCE MECHANICS OF MATERIAL	
CO1	Understand the advanced concept of stress-strain behaviour of materials.
CO2	Determine stress and strain transformations and derive constitutive equations in elasticity & understand different elastic functions.
CO3	Calculate fixing moments and support reactions in fixed and continuous beams.
CO4	Analyze stresses and deflection in curved beams.
CO5	Determine shear center in thin walled member and stress distribution in thick cylinders
CO6	Use analytical, experimental and computational tools needed to solve the idealized problem.
RAILWAY AND AIRPORT ENGINEERING	
CO1	To understand permanent way components and technicalities of rails.
CO2	To design the geometry of railway track.
CO3	To understand different components and laws governing the site selection of airport.
CO4	To design various components of airport.
CO5	To design about basic orientation in harbour structural systems and performance of engineering structures.
CO6	To understand the different inland waterways transportation in India.
WATER AND WASTE WATER ENGINEERING	
CO1	To understand the fundamentals of water treatment units and parts of water supply System.
CO2	To understands the importance of laboratory analysis for design of Water treatment units.
CO3	Understand the Design of water treatment plant.
CO4	Study of Miscellaneous treatment systems.
CO5	Study of water distribution system and rain water harvesting.
CO6	Apply knowledge of advanced water treatment processes for individual water purification.



GEOTECHNICAL ENGINEERING	
CO1	Ability to understand the terminology and basic equations of the subject.
CO2	Ability to perform different tests on soil to determine the properties of soil.
CO3	Understand the different methods to determine Stress in soil.
CO4	Ability to Solve of Shear Strength problems.
CO5	Understand the different methods to determine earth pressure on retaining structure.
CO6	Understand the causes of Slope Failure and preventive measures.
DESIGN OF STEEL STRUCTURES	
CO1	Gain knowledge about basic properties of steel and know about different connections.
CO2	Learn about tension and compression members and their design in steel structures.
CO3	To understands the design of beams.
CO4	Learn about plate girders and roof trusses.
CO5	Design the short and long columns with axial and eccentric loadings.
CO6	Design the tanks on ground, underground and elevated water tanks.
HYDROLOGY & IRRIGATION ENGINEERING	
CO1	Learn about basic concepts of hydrology and integrate the physical hydrological processes.
CO2	Study various process, measurement and estimation of hydrological components: evaporation, infiltration, stream flow etc.
CO3	To know the basics of irrigation and apply them to design irrigation canals.
CO4	Study various types of Cross-Drainage (CD) Works and dams
CO5	Plan and design diversion head works.
CO6	Analyze gravity and earthen dams, design spillways and energy Diversations works.
GROUND IMPROVEMENT TECHNIQUES	
CO1	Gain competence in properly devising alternative solutions to difficult and earth construction
CO2	Evaluate their effectiveness before, during and after construction.
CO3	Understand different approaches to the ground modification.
CO4	Understand the soil stabilisation for reinforced earth construction.
CO5	Understand the concepts behind various ground improvement techniques.
CO6	Predict the behaviour of ground after improvement.