

Department of Civil Engineering

Semester 3

Semester 3			
Sl.No.	Name of the Subject	CO Code	Course Outcomes
1	Mechanics of Solids	CE 201.1	Ability to calculate internal forces in members subject to axial loads, shear, torsion and bending and plot their distributions
		CE 201.2	Ability to calculate normal, shear, torsion and bending stresses and strains
		CE 201.3	Ability to transform the state of stress at a point and determine the principal and maximum shear stresses using equations as well as the mohr's circle
		CE 201.4	Understanding of column buckling and ability to calculate critical load and stress
2	Fluid Mechanics I	CE 203.1	Students will be able to get a basic knowledge of fluids in static, kinematic and dynamic equilibrium, so as to solve real life problems in fluid mechanics
		CE 203.2	Students will gain the knowledge of the applicability of physical laws in addressing problems in hydraulics
3	Engg. Geology	CE 205.1	The course would help the student to understand of the factors that determine the stability of earth's surface
		CE 205.2	The student would comprehend better the earth resources used as building materials
4	Surveying	CE 207.1	To introduce the principle of surveying
		CE 207.2	To impart awareness on the various fields of surveying and types of instruments
		CE 207.3	To understand the various methods of surveying and computations
5	Life Skills	HS210.1	student able to Communicate effectively.
		HS210.2	student able to Make effective presentations.
		HS210.3	student able to Write different types of reports.
		HS210.4	student able to Face interview & group discussion.
		HS210.5	student able to Critically think on a particular problem
		HS210.6	student able to Solve problems.
		HS210.7	student able to Work in Group & Teams
		HS210.8	student able to Handle Engineering Ethics and Human Values.
		HS210.9	student able to Become an effective leader.
6	Linear Algebra &Complex Analysis	MA 201.1	Student able to solve any given system of linear equations
		MA 201.2	Student able to find the Eigen values of a matrix and how to diagonalize a matrix
		MA 201.3	Student able to identify analytic functions and Harmonic functions.
		MA 201.4	Student able to evaluate real definite Integrals as application of Residue Theorem
		MA 201.5	Student able to identify conformal mappings
		MA 201.6	Student able to find regions that are mapped under certain Transformations
Semester 4			
Sl.No.	Name of the Subject	CO Code	Course Outcomes

1	Structural Analysis 1	CE 202.1	analyse trusses and study displacement response of statically determinate structural systems using energy methods:
		CE 202.2	apply unit load method and strain energy method for determination of deflection of statically determinate beams, frames & pin jointed trusses
		CE 202.3	analyse statically indeterminate structures using strain energy method and method of consistent deformation
		CE 202.4	know about moving loads and influence lines
		CE 202.5	know about Statically determinate and indeterminate suspension bridges and arches
2	Construction Technology	CE 204.1	understand construction materials, their components and manufacturing process
		CE 204.2	know the properties of concrete and different mix design methods
		CE 204.3	understand the details regarding the construction of building components
		CE 204.4	analyse and apply learning of materials, structure, servicing and construction of masonry domestic buildings.
		CE 204.5	define and describe the concepts and design criteria of tall framed and load bearing buildings.
3	Fluid Mechanics II	CE 206.1	become capable of analysing open channel flows & designing open channels.
		CE 206.2	get an insight into the working of hydraulic machines.
		CE 206.3	become capable of studying advanced topics such as design of hydraulic structures.
4	Geotechnical Engg. I	CE 208.1	understand the basic principles governing soil behavior.
		CE 208.2	understand the procedure, applicability and limitations of various soil testing methods.
5	probability distributions, Transforms and Numerical Methods	MA 202.1	concepts of Discrete and continuous probability density functions and special probability distributions.
		MA 202.2	Concepts of Laplace and Fourier transforms and apply them in their Engineering branch
		MA 202.3	concepts of numerical methods and their applications in solving Engineering problems.
6	Busniess Economics	HS 200.1	make investment decisions based on capital budgeting methods in alignment with microeconomic and macroeconomic theories.
		HS 200.2	able to analyse the profitability of the firm, economy of operation, determination of price under various market situations with good grasp on the effect of trade cycles in business.
		HS 200.3	gain knowledge on Monetary theory, measures by RBI in controlling interest rate and emerging concepts like Bit Coin.
		HS 200.4	gain knowledge of elementary accounting concepts used for preparing balance sheet and interpretation of balance sheet
Semester 5			
Sl.No.	Name of the Subject	CO Code	Course Outcomes
		CE 301.1	Apply the fundamental concepts of limit state method
		CE 301.2	Use IS code of practice for the design of concrete elements
		CE 301.3	Understand the structural behavior of reinforced concrete elements in bending, shear, compression and torsion.

1	Design of concrete structures 1	CE 301.4	Design beams, slab, stairs, columns and draw the reinforcement details.
		CE 301.5	Analyze and design for deflection and crack control of reinforced concrete members.
2	Structural Analysis II	CE 303.1	analyse structures using force method
		CE 303.2	analyse structures using displacement method
		CE 303.3	analyse curved beams in plan
		CE 303.4	analyse structures using plastic theory
3	Geotechnical Engg II	CE 305.1	understand the basic concepts, theories and methods of analysis in foundation engineering;
		CE 305.2	understand the field problems related to geotechnical engineering and to take appropriate engineering decisions.
4	Geomatics	CE307.1	The students will possess knowledge on the advanced methods of surveying, the instruments and the spatial representation of data.
5	Water Resource Engineering	CE 309.1	Describe the hydrologic cycle and estimate the different components
		CE 309.2	Determine crop water requirements for design of irrigation systems
		CE 309.3	Compute the yield of aquifers and wells
		CE 309.4	Know the features of various river training works
		CE 309.5	Estimate the storage capacity of reservoirs and their useful life.
6	Advanced Concrete Technology	CE 361.1	Understand the testing of concrete materials as per IS code
		CE 361.2	Know the procedure to determine the properties of fresh and hardened of concrete
		CE 361.3	Design the concrete mix using ACI and IS code methods
		CE 361.4	Select and Design special concretes depending on their specific applications
		CE 361.5	Gain ideas on non-destructive testing of concrete
Semester 6			
Sl.No.	Name of the Subject	CO Code	Course Outcomes
1	Design of Hydraulic Structures	CE302.1	Perform the stability analysis of gravity dams
		CE302.2	Explain the causes of failure of different types of dams and their design criteria
		CE302.3	Design minor irrigation structures such as regulators, cross drainage works and canal falls
2	Design of concrete structures II	CE 304.1	Design eccentrically loaded and slender columns using SP 16 design charts and different types of foundations
		CE 304.2	Design and detail cantilever retaining wall and understand the design principles of Counter fort retaining wall
		CE 304.3	Design and detail circular slabs and domes
		CE 304.4	Design rectangular and circular water tanks using IS code coefficients (IS 3370).
		CE 304.5	Gain knowledge of prestressed concrete fundamentals and analyse pre and post tensioned beams.
3	Computer programming and computational techniques	CE 306.1	develop computer programs and implement numerical techniques for solving basic engineering problems using C++ language.

4	Transportation Engg I	CE 308.1	Design various geometric elements of a highway
		CE 308.2	Determine the characteristics of pavement materials and design flexible pavements
		CE 308.3	Conduct traffic engineering studies and analyze data for efficient management of roadway facilities, Plan and design basic airport facilities
5	Ground Improvement Techniques	CE 362.1	An understanding about types of ground improvement techniques and soil distribution in India
		CE 362.2	Knowledge about various types of grouts and their applications
		CE 362.3	Knowledge about types of chemical stabilization and their construction method
		CE 362.4	Understanding about Ground Anchors, Rock Bolts and Soil Nailing
		CE 362.5	Knowledge about Compaction of soil
		CE 362.6	Understanding about various methods of dewatering of soil
6	Principles of Management	HS300.1	manage people and organisations
		HS300.2	critically analyse and evaluate management theories and practices
		HS300.3	plan and make decisions for organisations
		HS300.4	do staffing and related HRD functions
Semester7			
Sl.No.	Name of the Subject	CO Code	Course Outcomes
1	DESIGN OF STEEL STRUCTURES	CE401.1	Design bolted and welded connections.
		CE401.2	Design tension members and beam using the IS specifications
		CE401.3	Design columns under axial loads using IS specifications.
		CE401.4	Design beams and plate girders
		CE401.5	assess loads on truss and design purlins.
		CE401.6	Design structural components using timber.
2	STRUCTURAL ANALYSIS -III	CE 403.1	Analyse structures using approximate method.
		CE 403.2	Analyse trusses,continuous beams and rigid frames using flexibility method.
		CE 403.3	Analyse trusses,continuous beams and rigid frames by stiffness method.
		CE 403.4	conceive finite element procedures by direct stiffness method.
		CE 403.5	Use the basics of structural dynamics and analyse the response of SDOF system
3	ENVIRONMENTAL ENGINEERING-I	CE 405.1	became aware of the various pollutants affecting water quality
		CE 405.2	knows about the different treatment units available in a water treatment plant and their design procedures.
4	TRANSPORTATION ENGINEERING	CE407.1	This coursewill enable students to gain knowledge in railway and water transportation.
5	QUANTITY SURVEYING AND VALUATION	CE409.1	work out the quantities of materials and labour required for different types of civil works
		CE409.2	prepare schedule of rates for various items of work
		CE465.1	Deals with geo environmental engineering problems
		CE465.2	Utilize waste in geo technical engineering application
		CE465.3	Design landfill

6	GEO-ENVIRONMENTAL ENGINEERING	CE465.4	Manage leachate and landfill gas
		CE465.5	Do investigation on contaminated site and soil remediation.
		CE465.6	Assess variation in engineering properties of soil due to change in environment
7	HIGHWAY PAVEMENT DESIGN	CE467.1	Identify the pavement components and design bituminous mixes
		CE467.2	Analyse and design flexible and rigid pavements
		CE467.3	Evaluate structural condition of pavement
8	ENVIRONMENTAL IMPACT ASSESSMENT	CE469.1	The students will gain basic knowledge of various pollution sources and their impacts
Semester8			
Sl.No.	Name of the Subject	CO Code	Course Outcomes
1	ENVIRONMENTAL ENGINEERING II	CE402.1	have an understanding of the various types of treatment methods for wastewater
		CE402.2	know the design aspects of various treatment units in a wastewater treatment plant.
2	CIVIL ENGINEERING PROJECT MANAGEMENT	CE404.1	Plan and schedule a construction project
		CE404.2	Select an appropriate construction equipment for a specific job
		CE404.3	Familiarise the legal procedures in construction contracts
		CE404.4	Formulate suitable quality management plan for construction
		CE404.5	Familiarise the safety practices and procedures
		CE404.6	Apply principles of ethics in decision making
3	TOWN AND COUNTRY PLANNING	CE462.1	Identify and develop the various components of planning at neighborhood, city, regional and national levels
		CE462.2	Familiarize with spatial standards of facilities and prepare base maps for urban development
4	MUNICIPAL SOLID WASTE	CE474.1	Students will have an awareness of the ill effects of increasing solid wastes
		CE474.2	Students will be able to understand the various methods available for managing solid wastes generated
5	ENERGY CONSERVATION AND MANAGEMENT	ME482.1	carryout energy accounting and balancing
		ME482.2	suggest methodologies for energy savings