AY : 2020-21	II YEAR- I Sem	
On successful completion of this course the students will be able:		
CO. NO	**Course Outcomes**	**Taxonomy**
SPECIFIC LEARNING OUTCOMES – Complex Variables, Transforms and PDE (19A54301)		
C211.1	To Find the analytic functions using C-R equations, the image using conformal mapping and bi-linear transformation.	Apply
C211.2	To Use Cauchy's theorem, Cauchy's integral formula and Cauchy's residues theorem to evaluate complex integrations and expansion of complex functions using Taylor's and Laurent's series.	Apply
C211.3	To Define Laplace and inverse Laplace transforms of various functions and solve ordinary differential equations using Laplace transform.	Apply
C211.4	To Determine Fourier series of periodic functions in a given interval and Parseval's formula- Complex form of Fourier series.	Apply
C211.5	To Construct the partial differential equations and solve first order and second order PDEs by Lagrange's method and method of separation of variables respectively	Apply
C211.6	To Solve one dimensional wave, heat and Laplace equations.	Apply
SPECIFIC LEARNING OUTCOMES – Strength of Materials-I (19A01301T)		
C211.1	To Understand the different types of couples and force system	Understand
C211.2	To Design the various failures occur in the structure by shear & bending forces	Create
C211.3	To Understand the concept of the stress, strain, generalized hooke's law	Understand
C211.4	To Understand the concept of elastic moduli and strain energy	Understand
C211.5	To Develop shear force and bending moment diagrams for different load cases	Create
C211.6	To Understand the flexural stresses and shear stresses for different loading cases.	Understand
SPECIFIC LEARNING OUTCOMES – Fluid Mechanics (19A01302T)		
C212.1	To Understand the principles of fluid statics, kinematics and dynamics.	Understand
C212.2	To Understand the basic terms used in fluid mechanics	Understand
C212.3	To Understand the flow characteristics and classify the flows	Understand
C212.4	To Apply the continuity & momentum principles.	Apply
C212.5	To Apply the energy principles of fluid flows	Apply
C212.6	To Estimate various losses in flow through channels	Evaluate
SPECIFIC LEARNING OUTCOMES – Surveying (19A01303T)		
C213.1	To Calculate angles, distance and levels on ground surface	Apply
C213.2	To Identify data collection methods and prepare field notes	Remember
C213.3	To Understand the working principles of surveying instruments	Remember
C213.4	To Estimate the volumes of earthwork	Evaluate
C213.5	To Use modern survey instruments	Apply
C213.6	To Apply basic principles of EDM instruments	Apply
SPECIFIC LEARNING OUTCOMES – Building Materials and Construction (19A01304)		
C214.1	To Understand the characteristics of various building materials such as stones and clay	Understand
C214.2	To Evaluate the properties of binding materials in suitability of building constructions.	Evaluate

C214.3	To Determine the Characteristics of steel by conducting various tests.	Apply
C214.4	To Understand the construction procedure of various types of floorings.	Understand
C214.5	To Understand the components of doors and windows.	Understand
C214.6	To Understand the installation of electrical, sanitary and plumbing fittings in buildings.	Understand
SPECIFIC LEARNING OUTCOMES – Python Programming (19A05304T)		
C216.1	To Apply the basic concepts, modular approach to solve the problems.	Apply
C216.2	To Design the programs using conditional execution, recursion, built in functions, turtle	Create
C216.3	To Design programs to manipulate strings	Create
C216.4	To Apply python programs to read and write data from/to files.	Apply
C216.5	To Design the programs by choosing appropriate data structures like lists, dictionaries, tuples.	Create
C216.6	To Apply object oriented programming concepts	Apply
SPECIFIC LEARNING OUTCOMES – Universal Human Values (19A52301)		
C211.1	To Discuss the concept value-education in individual's life for happiness & prosperity	Understand
C211.2	To Explain the term self-exploration and its application for self-evaluation and development.	Understand
C211.3	To Discuss the importance of values in human relationships	Understand
C211.4	To Explain the holistic perception of harmony at level of self, family, society and nature.	Understand
C211.5	To Outline the co-existence of nature and human being	Analyze
C211.6	To Use professional ethics in their future profession for making a value-based society	Apply
SPECIFIC LEARNING OUTCOMES – Strength of Materials Laboratory (19A01301P)		
C217.1	To Differentiate the Mechanical properties of Materials through various tests	Understand
C217.2	To Interpret the material properties under different stress and strain conditions.	Understand
C217.3	To Predict the engineering properties of materials by using Hardness Test.	Apply
C217.4	To Calculate the Compressive and Tensile stresses of the material by using UTM.	Apply
C217.5	To Understand the Concepts of Shear Test and Impact Test on Materials.	Understand
C217.6	To Calculate the Deflection for Continuous beam by using Deflection test.	Apply
SPECIFIC LEARNING OUTCOMES –Fluid Mechanics Lab (19A01302P)		
C212.1	To Determine the fluid flow principles in orifice and Venturimeter	Apply
C212.2	To Calculate Coefficient of discharge for a small orifice by a constant head method	Analyze
C212.3	To Analyse the Calibration of contracted Rectangular Notch and /or Triangular Notch	Analyze
C212.4	To Determine Coefficient of loss of head in a sudden contraction and friction factor	Analyze
C212.5	To Understand the Study of Hydraulic jump at various points	Remember
C212.6	To Determine the Efficiency test on Centrifugal Pump.	Apply
SPECIFIC LEARNING OUTCOMES – Surveying Laboratory - (19A01303P)		

C213.1	To Evaluate the survey and to collect field data	Evaluate
C213.2	To Prepare field notes from survey data	Create
C213.3	To Interpret survey data and compute areas and volumes	Understand
C213.4	To Identify the various measurements	Remember
C213.5	To Interpret the data which can be collected in the site	Understand
C213.6	To Analyse the Total Station for various measurements	Analyse

AY : 2020-21	III YEAR- I Sem	
On successful completion of this course the students will be able:		
S NO	**Course Outcomes Statement**	**Taxonomy**
SPECIFIC LEARNING OUTCOMES – Design and Drawing of RCC structures(15A01501)		
C311.1	To Recognize the design philosophies of reinforced concrete structures	Understand
C311.2	To Apply the principles, procedures and current code requirements to analysis and design of reinforced concrete beams	Apply
C311.3	To Identify the behavior of reinforced concrete members in bond, anchorage, shear and torsion	Remember
C311.4	To Analyse and design reinforced concrete compression members.	Analyse
C311.5	To Analyse the load on the structure and design the footings	Analyse
C311.6	To Design combined column footing.	Create
SPECIFIC LEARNING OUTCOMES – Estimation, Costing and Valuation (15A01502)		
C312.1	To Apply different types of estimates for different building elements.	Apply
C312.2	To Analyse the rates and bill preparation different building elements	Analyse
C312.3	To Prepare the concepts of specification writing	Create
C312.4	To Estimate different volumes of earthwork	Evaluate
C312.5	To Compare the difference between contractors and tenders	Evaluate
C312.6	To Estimate the valuation of assets	Evaluate
SPECIFIC LEARNING OUTCOMES –Geotechnical Engineering I(15A01503)		
C313.1	To Differentiate the properties of soils such as phase relationships, unit weight, water content, grain size distribution, index properties, methods of soil classifications and compaction characteristics in soils	Understand
C313.2	To Interpret the concepts of total, neutral and effective stress in soils, principles of Darcy's law, permeability and seepage in soils and their effects in engineering applications	Understand
C313.3	To Express the concepts of stress distribution under varying load conditions using Boussinesq's and Westergaard's theories.	Understand
C313.4	To Summarize the principles of Terzaghi's theory of primary consolidation, settlement in soils and associated properties	Understand
C313.5	To Analyse the shear stress and shear strength properties in soils, Mohr diagrams, and methods of finding the shear strength parameters of soils using direct shear test, unconfined compression test and tri-axial shear tests.	Analyse
C313.6	To Analyse the Mohr's circle	Analyse
SPECIFIC LEARNING OUTCOMES – Engineering Geology(15A01504)		
C314.1	To Interpret the knowledge of principles of engineering geology	Understand
C314.2	To Analyse the properties of various rocks and minerals	Analyse
C314.3	To Justify the suitability of sites for various civil engineering structures.	Evaluate
C314.4	To Explain the knowledge for use of geological strata in the analysis and design the civil engineering structures.	Understand
C314.5	To Describe the suitability of water and soil conservation projects.	Remember
C314.6	To Analyse the structural behavior by using geophysical methods	Analyse

SPECIFIC LEARNING OUTCOMES – Structural Analysis II(15A01505)		
C315.1	To Analyse three and two hinged ,circular and parabolic arches	Analyse
C315.2	To Apply slope deflection and moment distribution methods to indeterminate structures	Apply
C315.3	To Calculate the effect of support settlements for indeterminate structures	Apply
C315.4	To Analyse indeterminate structures by kani's method	Analyse
C315.5	To Understand various matrix methods	Understand
C315.6	To Understand the principles of plastic collapse, shape factor and behaviour of structures due to ultimate and accidental loading	Understand
SPECIFIC LEARNING OUTCOMES – Water Harvesting and Conservation(15A01507)		
C317.1	To Identify the causes of soil erosion	Remember
C317.2	To Design soil conservation measures in a watershed	Create
C317.3	To Design water harvesting and ground water recharging structures	Create
C317.4	To Evaluate the measures for reclamation of saline soils	Evaluate
C317.5	To Analyse the water conservation techniques.	Analyse
C317.6	To Discuss the analysis for water conservation for various soils	Understand
SPECIFIC LEARNING OUTCOMES – Engineering Geology Laboratory (15A01508)		
C318.1	To Interpret the knowledge of principles of engineering geology	Understand
C318.2	To Identify the physical properties of Minerals and Rocks in the laboratory	Remember
C318.3	To Justify the suitability of sites for various civil engineering structures.	Evaluate
C318.4	To Explain the knowledge for use of geological strata in the analysis and design the civil engineering structures	Understand
C318.5	To Describe the suitability of water and soil conservation projects.	Understand
C318.6	To Analyze the structural behaviour by using geophysical methods.	Analyze
SPECIFIC LEARNING OUTCOMES – Geotechnical Engineering Laboratory (15A01509)		
C319.1	To Classify the soil based on Index Properties of Soil	Analyze
C319.2	To Calculate the Field and Dry Density of Cohesion-less and Cohesive soils.	Apply
C319.3	To Determine the Coefficient of Permeability of Coarse grained and Fine grained soils& also Compressibility Characteristics of Soil..	Apply
C319.4	To Evaluate the Shear Strength Parameters of Soil.	Evaluate
C319.5	To Interpret the Engineering Properties of soil by Direct Shear Test	Understand
C319.6	To Demonstrate various Experiments on Consolidation of Soil.	Apply
SPECIFIC LEARNING OUTCOMES – Audit course - Social Values & Ethics (15A99501)		
C311.1	To Differentiate between Basic Concepts of Family and Society	Understand
C311.2	To Analyse about Social Harmony and National Integration	Analyse
C311.3	To Understand the knowledge about Environment Issues	Understand
C311.4	To Explain about Gender Sensitization, Civil/ Self Defence	Understand
C311.5	To Differentiate between Physical, Psychological, Social problems	Understand
C311.6	To Differentiate between Kriyas, Bandhas and Mudras	Understand

AY : 2020-21	IV YEAR- I Sem	
On successful completion of this course the students will be able:		
SNO	**Course Outcomes Statement**	**Taxonomy**
SPECIFIC LEARNING OUTCOMES – Finite Element Methods(15A01701)		
C411.1	To Understand the fundamental concepts of the Finite Element Method (FEM)	Understand
C411.2	To Apply the basic properties, behaviour and usage of different types of finite elements	Apply
C411.3	To Develop shape functions and stiffness matrices for spring and bar elements	Create
C411.4	To Apply natural and Arial coordinate systems to constant strain triangle and linear Strain triangle elements	Apply
C411.5	To Identify the application and characteristics of FEA elements such as bars, beams, plane and Iso-parametric elements	Remember
C411.6	To Create Finite Element models and solve typical Civil Engineering. Problems using FEM	Create
SPECIFIC LEARNING OUTCOMES – Transportation Engineering II(15A01702)		
C412.1	To Interpret the importance of railway infrastructure planning and design	Understand
C412.2	To Identify the factors governing design of railway infrastructures	Remember
C412.3	To Design and analyze the railway track system	Create
C412.4	To Explain the process of execution of railway projects	Understand
C412.5	To Analyse and design of the airport runway	Analyse
C412.6	To Analyse about the description of harbours & ports	Analyse
SPECIFIC LEARNING OUTCOMES – Environmental Engineering(15A01703)		
C413.1	To Identify the source of water and water demand	Remember
C413.2	To Apply the water treatment concept and methods	Apply
C413.3	To Prepare basic process designs of water and wastewater treatment plants collect, reduce, analyze, and evaluate basic water quality data	Create
C413.4	To Determine the sewage characteristics	Apply
C413.5	To Apply environmental treatment technologies and design processes	Apply
C413.6	To Predict the causes of air pollution and noise pollution	Evaluate
SPECIFIC LEARNING OUTCOMES – Water Resource Engineering II(15A01704)		
C414.1	To Understand various hydraulic structures such as diversion head work, canal falls and structures involved in cross drainage works	Understand
C414.2	To Differentiate the different aspects of design of hydraulic structures	Understand
C414.3	To Design various canal systems	Create
C414.4	To Design head and cross regulator structures	Create
C414.5	To Identify various types of reservoir and their design aspects	Remember
C414.6	To Discuss about flood routing concepts & Design of different types of dams	Understand
SPECIFIC LEARNING OUTCOMES – Design and Drawing of Irrigation Structures(15A01705)		

C415.1	To Express knowledge of various irrigation structures	Understand
C415.2	To Discuss various structures involved in cross drainage work	Understand
C415.3	To Design various irrigation structural components	Create
C415.4	To Solve design aspects of irrigation structures	Apply
C415.5	To Illustrate various operation procedures of hydraulic structures	Apply
C415.6	To Design and identify various types of reservoirs	Create
SPECIFIC LEARNING OUTCOMES – Ground Improvement Techniques(15A01706)		
C416.1	To Understand soil dewatering techniques with respect to field conditions.	Understand
C416.2	To Understand grouting techniques with respect to field conditions.	Understand
C416.3	To Understand about the improvement of in-situ cohesive soils as well as Cohesion less soils	Understand
C416.4	To Design the principles of reinforced soil walls.	Create
C416.5	To Apply the Applications of geo synthetics in suitable field conditions	Apply
C416.6	To Identify about the problematic soil	Remember
SPECIFIC LEARNING OUTCOMES – Rehabilitation and Retrofitting of Structure(15A01710)		
C410.1	To Identify and define all the terms and concepts associated with deterioration and distress in concrete structures.	Remember
C410.2	To Design and develop maintenance of structures, type and properties of repair materials etc	Create
C410.3	To Develop various maintenance and repair strategies	Create
C410.4	To Evaluate the existing buildings through field investigations	Evaluate
C410.5	To Understand different strengthening methods for structural retrofitting and jacketing	Understand
C410.6	To Understand various types of sensors and building instrumentation	Understand
SPECIFIC LEARNING OUTCOMES – CAD Laboratory(15A01711)		
C4111.1	To Sketch out Two Dimensional sketches, views in CAD environment	Apply
C4111.2	To Apply structural drawing of reinforced concrete elements such as beams.	Apply
C4111.3	To Design structural drawing of Reinforced Concrete Elements such as Beams.	Create
C4111.4	To Design Structural drawings of steel elements such as Tension members and Compression members.	Create
C4111.5	To Design Structural drawings of steel elements such as Beams, Column Base and Roof Trusses	Create
C4111.6	To Design Various connections or Joint details.	Create
SPECIFIC LEARNING OUTCOMES – Environmental Engineering Laboratory(15A01712)		
C4112.1	To Estimate various parameters like PH, Chlorides, Sulphates, Nitrates in water	Evaluate
C4112.2	To Demonstrate the laboratory experiments on various parameters of water and waste water.	Apply
C4112.3	To Analyse the technical laboratory report on quality assessment of potable and waste water.	Analyse
C4112.4	To Estimate of industrial effluents of samples in the laboratory	Evaluate
C4112.5	To Apply the laboratory results in the basic environmental design and in the field of Engineering	Apply
C4112.6	To Analyse and estimate the quality of water both in potable water and waste water.	Analyse