| AY 2018-19 | CE- II YEAR- I Sem | |
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| On successful completion of this course the students will be able: | | |
| **SNO** | **Course Outcomes** | **Taxonomy** |
| **SPECIFIC LEARNING OUTCOMES – MATHEMATICS-III(15A54301 )** | | |
| C211.1 | To Solve linear system of equations and calculate the Eigen values and Eigen vectors of the given square matrices. | Apply |
| C211.2 | To Apply Cayley – Hamilton theorem to find the inverse and powers of a square matrix. Discuss the nature of the quadratic form. | Apply |
| C211.3 | To Predict the Use of numerical techniques find solution of algebraic and transcendental Equations. | Apply |
| C211.4 | To Estimate the interpolating value of the function using Numerical techniques. | Evaluate |
| C211.5 | To Demonstrate the best fit of curves for the given data and Evaluate define integrals using Newton cotes Formula | Apply |
| C211.6 | To Solve numerical methods to find numerical solution of ordinary and partial differential equations | Apply |
| **SPECIFIC LEARNING OUTCOMES –Electrical and Mechanical Technology(15A01301 )** | | |
| C211.1 | To Explain about constructional details and principles of operation of DC machines | Understand |
| C211.2 | To Explain about working and classification of DC machines as generators and Motors | Understand |
| C211.3 | To Explain about the testing and application of Synchronous Machines | Understand |
| C211.4 | To Explain various types of welding process with neat sketch | Understand |
| C211.5 | To Explain working of IC engines and gas turbines | Understand |
| C211.6 | To Explain principles of air conditioning | Understand |
| **SPECIFIC LEARNING OUTCOMES – Building Materials and Construction(15A01302 )** | | |
| C212.1 | To Explain the ability about different materials such as stones, bricks, Tiles, wood, aluminium, glass & paints and their classification , manufacture and structural requirements. | Understand |
| C212.2 | To Prepare appropriateness and sustainability of materials for construction projects. | Create |
| C212.3 | To Describe materials for construction of building. | Understand |
| C212.4 | To Understand various building components such as lintels, arches, types of roofs and joinery such as doors, windows and masonry works with the materials used in making. | Understand |
| C212.5 | To Understand the quality of various construction materials. | Understand |
| C212.6 | To Identify and select the materials for construction activities. | Remember |
| **SPECIFIC LEARNING OUTCOMES – Strength of Materials-I(15A01303 )** | | |
| C213.1 | To Understand the materials properties & definition of stress strain with their relationship, various loadings like gradually applied load, shock load, sudden load and impact load. | Understand |
| C213.2 | To Design the various failures occur in the structure by shear & bending forces | Create |
| C213.3 | To Design simple beam sections | Create |

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| C213.4 | To Understand the concept of the slope & deflection method Double integration and Macaulay's methods. | Understand |
| C213.5 | To Identify various types of beams & solve the problems based on the moment area method, to know the concept of Mohr's theorem. | Remember |
| C213.6 | To Understand the conjugate beam method & to find the various stresses acting on the chimneys, retaining walls and dams | Understand |
| **SPECIFIC LEARNING OUTCOMES – Surveying I(15A01304 )** | | |
| C214.1 | To Calculate preliminary surveying in the field of civil engineering applications such as structural, highway engineering and geotechnical engineering | Apply |
| C214.2 | To Outline accurate measurements, field plotting and adjustment of traverse | Analyse |
| C214.3 | To Identify various conventional instruments involved in surveying with respect to utility and precision | Remember |
| C214.4 | To Estimate survey for applications, such as road alignment and height of the building etc | Evaluate |
| C214.5 | To Illustrate the measurements in the field and plot them in chart. | Analyze |
| C214.6 | To Evaluate differences in elevation, draw and utilize contour plots and calculate volumes for earth work. | Evaluate |
| **SPECIFIC LEARNING OUTCOMES – Fluid Mechanics(15A01305 )** | | |
| C215.1 | To Explain fundamental knowledge of fluid, its properties and behaviour under various conditions of internal and external flows | Understand |
| C215.2 | To Calculate fluid forces acting on different surfaces | Apply |
| C215.3 | To Analyze about buoyancy and stability of a floating body & submerged body | Analyze |
| C215.4 | To Formulate the equations used for analysis of dynamic fluids. | Create |
| C215.5 | To Solve discharge by using continuity equations and energy equation | Apply |
| C215.6 | To Examine energy losses in pipe transitions and sketch energy gradient lines | Apply |
| **SPECIFIC LEARNING OUTCOMES – Surveying Laboratory – I (15A01306 )** | | |
| C216.1 | To Evaluate the survey and the collect field data | Evaluate |
| C216.2 | To Prepare field notes from survey data | Create |
| C216.3 | To Interpret survey data and compute areas and volumes | Understand |
| C216.4 | To Identify the various measurements | Remember |
| C216.5 | To Interpret the data which can is collected in the site | Understand |
| C216.6 | To Analyze the total station for various measurements | Analyze |
| **SPECIFIC LEARNING OUTCOMES – Strength of Materials Laboratory (15A01307 )** | | |
| C217.1 | To Differentiate the mechanical properties of materials through various tests | Understand |
| C217.2 | To Interpret the basics of material properties, stress and strains | Understand |
| C217.3 | To Predict and formulate the engineering properties of materials | Apply |
| C217.4 | To Calculate the compressive and tensile stresses of the material | Apply |
| C217.5 | To Understand the knowledge of shear strength of the materials | Understand |
| C217.6 | To Formulate the values that are obtained for the materials | Create |

| AY 2018-19 | CE-III YEAR- I Sem | |
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| 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 Analyze and design reinforced concrete compression members. | Analyze |
| C311.5 | To Analyze the load on the structure and design the footings | Analyze |
| 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 Analyze the rates and bill preparation different building elements | Analyze |
| 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 Analyze 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. | Analyze |
| C313.6 | To Analyze the Mohr's circle | Analyze |
| **SPECIFIC LEARNING OUTCOMES – Engineering Geology(15A01504 )** | | |
| C314.1 | To Interpret the knowledge of principles of engineering geology | Understand |
| C314.2 | To Analyze the properties of various rocks and minerals | Analyze |
| 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 | Understand |

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| | analysis and design the civil engineering structures. | |
| C314.5 | To Describe the suitability of water and soil conservation projects. | Remember |
| C314.6 | To Analyze the structural behavior by using geophysical methods | Analyze |
| **SPECIFIC LEARNING OUTCOMES – Structural Analysis II(15A01505 )** | | |
| C315.1 | To Analyze three and two hinged ,circular and parabolic arches | Analyze |
| 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 Analyze indeterminate structures by kani's method | Analyze |
| C315.5 | To Understand various matrix methods | Understand |
| C315.6 | To Understand the principles of plastic collapse, shape factor and behavior 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 Analyze the water conservation techniques. | Analyze |
| C317.6 | To Discuss the analysis for water conservation for various soils | Understand |
| **SPECIFIC LEARNING OUTCOMES – Engineering Geology Laboratory (15A01508)** | | |
| C318.1 | To Analyze various categories of rocks and minerals by their origin and engineering properties. | Analyze |
| C318.2 | To Apply geological principles to rock masses and discontinuities for use in engineering design e.g. rock slopes, foundation. | Apply |
| C318.3 | To Identify and recognize various minerals, rocks and their properties | Remember |
| C318.4 | To Determine the behavior of breeding planes in terms of solving strike and dip | Apply |
| C318.5 | To Prepare sections of geological maps showing tilted beds, fault beds. | Create |
| C318.6 | To Solve structural geology problems | Apply |
| **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& 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 | Apply |
| **SPECIFIC LEARNING OUTCOMES – Audit course - Social Values & Ethics (15A99501)** | | |
| C311.1 | To Differentiate between Basic Concepts of Society, Family and Society | Understand |

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| C311.2 | To Analyze about Social Harmony and National Integration | Analyze |
| C311.3 | To Understand the knowledge about Environment Issues | Understand |
| C311.4 | To Explain about Gender Sensitization, Civil/ Self Defense | Understand |
| C311.5 | To Differentiate between Physical, Psychological, Social problems | Understand |
| C311.6 | To Differentiate between Kriyas, Bandhas and Mudras | Understand |

| AY 2018-19 | CE-IV YEAR- I Sem | |
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| 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 Analyze and design of the airport runway | Analyze |
| C412.6 | To Analyze about the description of harbors & ports | Analyze |
| **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 | 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 |

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| **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 | Remember |
| 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 Analyze the technical laboratory report on quality assessment of | Analyze |

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| | portable and waste water. | |
| C4112.4 | To Estimate of industrial effluents of samples of laboratory | Evaluate |
| C4112.5 | To Apply the laboratory results in the basic environmental design and in the field of Engineering. | Apply |
| C4112.6 | To Analyze and estimate the quality of water both in water and waste water. | Analyze |