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COURSE CODE	COURSE NAME	COS	COURSE OUTCOMES
I SEMESTER			
23BS1101	LINEAR ALGEBRA & CALCULUS	CO1	Solve the system of homogeneous and non-homogeneous linear equations
		CO2	Examine the nature of a quadratic form by transforming into a canonical form
		CO3	Determine maxima and minima of multivariable functions
		CO4	Evaluate areas and volumes using double, triple integrals
23BS1102A	ENGINEERING CHEMISTRY	CO1	Analyse various water treatment methods and boiler troubles.
		CO2	Apply the knowledge of basic electrochemistry principles for electrochemical energy systems and corrosion.
		CO3	Compare mechanistic aspects of polymerisation, and different polymers and conventional fuels for their effective utilisation
		CO4	Evaluate various modern engineering materials for their applications in engineering and other field
23ES1103B	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	CO1	Apply different techniques to solve DC circuits.
		CO2	Understand the magnetic circuit concepts.
		CO3	Analyze the steady-state response, series, parallel AC circuits, mesh & nodal analysis, and resonance
		CO4	Apply network theorems for AC & DC circuits
		CO5	Demonstrate the working principles of basic Electronic devices, circuits and instrumentation System
		CO6	Implementation of simple Combinational and Sequential circuits using Logic gates.
23ES1104	INTRODUCTION TO PROGRAMMING	CO1	To introduce students to the fundamentals of computer programming.
		CO2	To provide hands-on experience with coding and debugging on control structures and arrays.
		CO3	To foster logical thinking and problem-solving skills on strings and pointers.
		CO4	To familiarize students with programming concepts such as functions, structures and files.
		CO1	Analyze water samples and various commercial samples of acids, cement, coal,

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23ES1151A	ENGINEERING CHEMISTRY LAB		lubricants, etc. for their purity and quality
		CO2	Analyze samples of water and cement through various instrumental methods like colorimetry, and pH metry.
		CO3	-Apply standard procedures for preparation of nanomaterials, polymers and blueprinting, as well as study the adsorption process
23ES1152	COMPUTER PROGRAMMING LAB	CO1	Read, understand, and trace the execution of programs written in C language
		CO2	Select the right control structure for solving the problem
		CO3	Develop C programs which utilize memory efficiently using programming constructs like pointers.
		CO4	Develop, Debug and Execute programs to demonstrate the applications of arrays, functions, basic concepts of pointers in C
23 ES1154B	HEALTH AND WELLNESS, YOGAAND SPORTS	CO1	Understand the importance of yoga and sports for Physical fitnessand sound health
		CO2	Demonstrate an understanding of health-related fitnesscomponents
		CO3	Compare and contrast various activities that help enhance theirhealth.
		CO4	Assess current personal fitness levels.
		CO5	Develop Positive Personality
II SEMESTER			
23BS2101	DIFFERENTIAL EQUATIONS AND VECTOR CALCULUS	CO1	Solve first order linear differential equations
		CO2	Solve higher order linear differential equations with constantcoefficients
		CO3	Solve Partial differential equations
		CO4	Evaluate the work done against field, circulation and flux usingvector calculus
23BS2102	ENGINEERING PHYSICS	CO1	Elaborate different types of lasers, optical fibers and theirapplication
		CO2	Familiarize with the basics of crystals and their structures.
		CO3	Summarize various types of polarization of dielectrics and classify the magnetic materials.
		CO4	Explain the basic concepts of Quantum Mechanics and types ofsemiconductors using Hall Effect.
		CO1	Understand various Civil Engineering sub-divisions thereby appreciate their role in ensuring a better society and understand the basic building components along with attaining knowledge of

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23ES2103 A	BASIC CIVIL AND MECHANICAL ENGINEERING		Civil Engineering Materials and prefabricated technology.
		CO2	Know the basic concepts, uses and classification of surveying and realize the importance of Transportation in the nation's economy and the engineering measures related to Transportation and understand the importance of Water Storage and Conveyance Structures so that the social responsibilities of water conservation will be appreciated
		CO3	Understand the scope of Mechanical Engineering in different sectors and industries and know about different manufacturing processes.
		CO4	Explain the basics of thermal engineering, Power plants, power transmission and robotics.
23PC2104 B	ENGINEERING MECHANICS	CO1	Analyze coplanar concurrent, parallel forces and evaluate centroid for plane figure
		CO2	Analyze coplanar general case forces and evaluate moment of inertia for plane figures
		CO3	Analyze rectilinear and curvilinear motion of particles
		CO4	Evaluate the moment of inertia of material bodies and analyze the fixed axis rotation of rigid bodies.
23HS2105	COMMUNICATIVE ENGLISH	CO1	Understand the context, topic, and pieces of specific information from social or Transactional dialogues
		CO2	Apply grammatical structures to formulate sentences and correct word forms
		CO3	Analyze discourse markers to speak clearly on a specific topic in
		CO4	Evaluate reading texts / listening to write summaries based on global comprehension and create a coherent paragraph, essay and résumé
23BS2151	ENGINEERING PHYSICS LAB	CO1	Test optical components using principles of interference and diffraction of light
		CO2	Use spectrometer, travelling microscope and function generator in various experiments
		CO3	Determine the V-I characteristics of photo cells and appreciate the accuracy in measurements
23PC2152E	ENGINEERING MECHANICS LAB	CO1	Evaluate the coefficient of friction between two different surfaces and between the inclined plane and the roller.
		CO2	Verify Law of Polygon of forces and Law of Moment using force polygon and bell crank lever.
		CO3	Determine the Centre of gravity and Moment of Inertia of different configurations.
		CO4	Verify the equilibrium conditions of a rigid body under the action of different force systems

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23HS2153	COMMUNICATIVE ENGLISH LAB	CO1	Understand the different aspects of the English language proficiency with emphasis on LSRW skills.
		CO2	Apply communication skills through various language learningactivities.
		CO3	Analyze the English speech sounds, stress, rhythm, intonationand syllable division for better listening and speaking comprehension.
		CO4	Evaluate and exhibit professionalism in participating in debatesand group discussions.
23ES2154	ENGINEERING WORKSHOP	CO1	Understand the basic joints using wood and familiarize with various fundamental aspects of house wiring, fitting and foundry.
		CO2	Prepare basic models using sheet metal and practice joining of metals using various types of welding.
		CO3	Familiarize with various advanced manufacturing processes such as injection moulding and 3D printing.
		CO4	Understand the preparation of PCB and simple IOT applicationsusing Arduin
23ES2155	IT WORKSHOP	CO1	Perform Hardware troubleshooting.
		CO2	Understand Hardware components and inter dependencies
		CO3	Safeguard computer systems from viruses/worms
		CO4	Document/ Presentation preparation.
23MC2106	DESIGN THINKING	CO1	Understand the concepts of Design Thinking
		CO2	Investigate a problem to determine its root cause
		CO3	Able to develop design thinking skills and experiment withdifferent solutions.
		CO4	Able to develop prototypes and can test
III SEMESTER			
23BS3101A	MECHANICS OF SOLIDS	CO1	Understand the concepts of stresses, strains and principles stresses and strains.
		CO2	Determine the shear forces and bending moments
		CO3	Determine the bending stresses and deflection at any point subjected to loads.
		CO4	Determine the shear stress in beams, torsion in shafts, strain energy.
		CO5	Determine the compound stresses and behavior of columns.
23ES3103	ENGINEERING GEOLOGY	CO1	Analyze and classify various minerals and rocks on the basis of their engineering properties..
		CO2	Apply quantitative skills and frame work for solving basic engineering geology problems

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			related to geological features and geological hazards
		CO3	Understand the importance of geo physical methods making engineering decisions specially site selection of engineering projects.
		CO4	Evaluate geological problems for a meaningful solution in the context of major civil engineering projects and their environmental impact
23CE3304	SURVEYING & GEOMETICS	CO1	Understand the basic principles of surveying and linear measurements
		CO2	Evaluate the reduced levels and plot contours
		CO3	Understand angular measurements and setting out simple curves
		CO4	Evaluate areas and volumes of various sections
		CO5	Understand various modern field equipments
23CE3305	FLUID MECHANICS	CO1	Evaluate the pressure of the flowing fluid.
		CO2	Understand the kinematic and dynamic behavior of flow
		CO3	Apply the principles to measure the flow of fluid through pipes and Orifices/ Mouthpieces
		CO4	Analyze the flow through pipes
23CE3308	CONCRETE TECHNOLOGY	CO1	Understand the manufacturing process of cement, types of cements and chemical composition of cement.
		CO2	Apply properties of the constituent materials in concrete
		CO3	Analyze and Compare the Properties of fresh and hardened concrete.
		CO4	Understand effects of various chemical actions on concrete.
		CO5	Evaluate various special concretes and concreting methods based on the scenario.
		CO6	Evaluate an appropriate concrete mixdesign using Indian Standard.
23HS4105	UNIVERSAL HUMAN VALUES	CO1	Understand and aware of themselves and their surroundings(family, society and nature).
		CO2	Handle problems with sustainable solutions, while keeping human relationships and human nature in mind.
		CO3	Exhibit critical ability and become sensitive to their commitment towards their understanding human values, human relationship and human society.
		CO4	Apply what they have learnt to their own self in different day-to-day settings in real life.

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23CE3651	COMPUTER AIDED CIVIL ENGINEERING DRAWING	CO1	Apply the knowledge of Various measurements and dimensions of a building components
		CO2	Understand principles of planning, principles of architecture and building Bye-laws.
		CO3	Apply the principles of planning to secure building plans as per Building bye-laws
		CO4	Analyze the requirements of user to draw the plan, elevation, sectional view of the building as per principles of planning and NBC
23TP3106	LOGIC AND REASONING	CO1	Think reason logically in any critical situation
		CO2	Analyze given information to find correct solution
		CO3	To reduce the mistakes in day to day activities in practical life.
		CO4	Develop time management skills by approaching different shortcut methods
		CO5	Use mathematical based reasoning to make decisions
		CO6	Apply logical thinking to solve problems and puzzles in qualifying exams forcompanies and inother competitive exams
IV SEMESTER			
23CE4101	ENGINEERING ECONOMICS AND MANAGEMENT	CO1	Understand the principles of economics, income and goods and service tax.
		CO2	Apply the concepts of management and demand forecasting
		CO3	Evaluate time value of money and various forms of decision making.
		CO4	Apply the concept of financial importance in projects and budgeting process.
23BS4102A	PROBABILITY AND STATISTICS FOR ENGINEERS	CO1	Find probabilities using axioms and understand random variables.
		CO2	Estimate Probability density functions.
		CO3	Apply random phenomena of sample to estimate errors
		CO4	Analyze correlation, regression and quality improvement , control charts.
23CE4303	STRUCTURAL ANALYSIS	CO1	Understand, draw and interpret influence line diagrams.
		CO2	Apply energy methods for analysis of indeterminate beams and frames.
		CO3	Analyze statically indeterminate structures using force and displacement methods.

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		CO4	Evaluate multistory frames for vertical and horizontal loads by approximate methods
23CE4304	GEOTECHNICAL ENGINEERING	CO1	Understand the origin of soil and basic inter-relationships of soil components
		CO2	Determine the index properties of soil and classify the soil based on the index properties
		CO3	Understand the Soil-Water Interactions
		CO4	Understand and determine compressibility and shear strength characteristics of soils
23CE 4305	HYDRAULICS & HYDRAULIC MACHINES	CO1	Evaluate the most economical dimensions of different channel sections.
		CO2	Analyze the flow through an open channel.
		CO3	Evaluate an equation for a phenomenon using dimensional analysis.
		CO4	Analyze and select suitable type of turbine/Pump.
23CE4353	STRENGTH MATERIALS LAB	CO1	Understand the properties of wood, steel and other building materials as per IS code provisions.
		CO2	Analyse the behavior in stress-strain, deflection, flexure/bending and torsion, of building components
23TP4106	ENGLISH FOR PROFESSIONALS	CO1	How conversations are made
		CO2	Usage of grammar
		CO3	Etiquettes and manners
		CO4	Speaking Skills
23CE4607	AUTODESK REVIT AND EXCEL FOR ENGINEERS	CO1	Analyze 3D Structural elements using Autodesk Revit and develop drawings with the necessary details for construction
		CO2	Apply spreadsheet techniques to solve different engineering problems
23MC3107	ENVIRONMENTAL STUDIES	CO1	Identify various factors causing degradation of natural resource and control measures
		CO2	Identify various ecosystems and need for biodiversity
		CO3	Interpret the problems related to environmental pollution and its Management
		CO4	Apply the information and technology to analyze social issues