



METHODIST
COLLEGE OF ENGINEERING & TECHNOLOGY
 (An UGC-AUTONOMOUS INSTITUTION)



Estd : 2008

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DEPARTMENT OF CIVIL ENGINEERING

A.Y:2021-22 ODD SEM CO Summary

S.no	Sem ester	Cour se Code	Course Name	COURSE OUTCOMES		Bloom's Taxonomy Level
				Co No	Course Outcome	
1	III	BS205MT	Mathematics-III	CO1	Find the general solutions of the given differential equations.	Remembering
				CO2	Solve the wave equation, heat equations and Laplace equations of given problems	Applying
				CO3	Solve the discrete and continuous random variables and distributions.	Applying
				CO4	Examine the correlation coefficient and rank correlation for the given data.	Analyzing
				CO5	Determine straight line equation, parabola equation and exponential equation.	Evaluating
				CO6	Evaluate t-distribution F-distribution and chi-square distributions.	Evaluating
2	III	ES301EE	Basic Electrical Engineering	CO1	Analyze DC electrical circuits to compute various parameters of electrical energy	Analyzing
				CO2	Analyze AC electrical circuits to compute various parameters of electrical energy	Analyzing
				CO3	Explain the operation of transformers and 3-phase induction motor and understand their performance	Understanding
				CO4	Describe the operation of DC machines and explain the performance characteristics	Understanding
				CO5	Explain the operation of 1-phase induction motor	Understanding
				CO6	Identify and test various electrical switchgear and assess the ratings needed in given applications	Understanding
3	III	PC401CE	Building Materials and Construction	CO1	Classify the types of construction materials like bricks, stones, steel, timber and their uses	Understanding
				CO2	Demonstrate the composition, properties and tests of cement and aggregates	Understanding
				CO3	Explain the manufacturing of concrete, properties and tests of fresh & hardened concrete	Understanding



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				CO4	Discuss the types, properties of miscellaneous building materials like pointing, white & color washing, plastering, paints, varnishes, flooring, glass, bitumen etc.	Understanding
				CO5	Illustrate the importance of energy conservation, damp proof coarse and fire protection in buildings	Understanding
4	III	PC402CE	Solid Mechanics	CO1	Apply the fundamental concepts of stress and strain in the analysis and design of axially loaded members	Applying
				CO2	Analyze determinate beams subjected to various types of transverse loads to draw shear force diagrams and bending moment diagrams	Analyzing
				CO3	Derive the bending and shear equations for beams, determine the bending stress and shear stress distributions and solve associated analysis and design problems	Applying
				CO4	Analyse short columns and struts subjected to combined axial and bending loads and identify the kernel for various cross-sections	Analyzing
				CO5	Analyze the compound stresses at a point due to multi-axial loading, compute principal stresses and planes, draw Mohr's circle, and apply these concepts in stress analysis and design of cylindrical pressure vessels	Analyzing
				CO6	Compute the stresses of circular members subjected to pure torsion and apply bending and torsion concepts in the analysis and design carriage and helical springs	Applying
5	III	PC403CE	Fluid Mechanics	CO1	Define Fluid and its properties like Density, Specific weight, Specific gravity, Kinematic and dynamic viscosity etc.	Remembering
				CO2	Classify one-, two- & three-dimensional flows, rotational and irrotational flows, ideal and real flows, compressible and incompressible flows etc.	Understanding
				CO3	Apply the law of mass and energy conservation concepts in problem solving by application of engineering knowledge.	Applying
				CO4	Analyze the type of flow (convective or locally accelerated)	Analyzing



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				CO5	Design the discharge measuring devices and pressure measuring devices like manometers and piezometers.	Creating
				CO6	Apply the concepts of fluid mechanics in the isothermal and adiabatic conditions of fluid flow.	Applying
6	III	PC404CE	Surveying and Geomatics	CO1	Explain the terminologies and concepts involved in basic and modern surveying equipments & technologies and also defines the concepts of horizontal and vertical curves.	Understanding
				CO2	Demonstrate the working principles and applications of basic and modern surveying instruments like chain, prismatic compass, plane table, dumpy level, theodolite and total station.	Applying
				CO3	Apply the knowledge of surveying & levelling in calculating lengths, bearings, reduced levels, elevation differences and plotting of a ground	Applying
				CO4	Apply the knowledge of theodolite and trigonometry in finding horizontal and vertical angles, heights of inaccessible points	Applying
				CO5	Make use of knowledge of curves concept in surveying, in setting out both horizontal and vertical curves for the purpose of roadway and railway alignment	Analyzing
				CO6	Analyse the amount of closing error of a traverse after finding out the omitted measurements in traverse and compute the missing data	Analyzing
7	III	PC451CE	Fluid Mechanics Laboratory	CO1	Compute Cd of Notch	Evaluating
				CO2	Find out Cd of Circular Orifice and Orifice Meter	Applying
				CO3	Determine Darcy's Friction factor	Applying
				CO4	Application of Bernoulli's Principle in Fluid Mechanics	Applying
				CO5	Find out Cd of Venturimeter	Applying
				CO6	Identify type of flow using Reynold's Experiment	Understanding
8	III	PC452CE	Surveying Laboratory	CO1	Demonstrate the working principles and handling procedures of basic surveying instruments like chain, prismatic compass, plane table in finding out linear and angular measurements	Understanding



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				CO2	Make use of surveying equipments in computing lengths, areas & bearings of given field work	Applying
				CO3	Demonstrate the levelling instruments and apply the knowledge of levelling in finding out the reduced levels of ground	Understanding
				CO4	Demonstrate the working principles and handling procedures of theodolite and total station	Understanding
				CO5	Make use of theodolite in finding out horizontal and vertical angles and also in setting out horizontal curves	Applying
				CO6	Apply the knowledge of trigonometrical levelling in finding out reduced levels of elevated objects which are both accessible and inaccessible using theodolite and total station	Applying
9	III	ES354CE	Building Drawing & Drafting Laboratory	CO1	Illustrate the basic principles of building planning and drawings as per codal provisions	Understanding
				CO2	Apply the tools of AUTOCAD software to prepare structural drawings of various building components	Applying
				CO3	Draw plan, elevation and sectional drawings of residential, hostel, hospital, school buildings in AutoCAD software	Creating
				CO4	Create electrical, plumbing and sanitary drawings of a building.	Creating
				CO5	Develop isometric views of Single storey and Double storey residential buildings	Creating
1	V	PC321CE	Structural Analysis -I	CO1	Apply the concept of principle of superposition to derive slope deflection equation.	Applying
				CO2	Explain the concepts of fixed end moments, free end moments, equilibrium conditions, stiffness, distribution factors and rotation factor.	Understanding
				CO3	Analyse the continuous beam and frame using different methods (slope-deflection method, moment distribution method and kani's method) to plot SFD and BMD.	Evaluating



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				CO4	Analyse the procedure to draw influence line diagram for finding support reactions, shear force and bending moment for the given beam and three-hinged arch.	Evaluating
				CO5	Analyse the procedure to draw influence line diagram for finding forces in all the members of the given truss.	Evaluating
				CO6	Analyse the suspension cable using influence line diagram for finding horizontal and vertical components of tension in the cable, tension in the cable, shear force and bending moment.	Evaluating
2	V	PC322CE	Hydraulic Engineering	CO1	Explain the significance of Reynold's experiment, Hagen Poiseuille Equation, Darcy Weisbach Equation, Hydraulic Jump, Rayleigh and Buckingham Pi theorem.	Understanding
				CO2	Define the different types of Pumps and Turbines on the basis of principle on which it works.	Remembering
				CO3	Make Use of the knowledge in selection of hydraulic turbines and pumps, most economical channel, application of Hydraulic jump.	Applying
				CO4	Apply the basic principles in the design of most economical channel, creating hydraulic jump.	Applying
				CO5	Analyse the turbine/pump laws and constant for hydraulic design.	Analyzing
				CO6	Develop the pipe network systems with given friction and velocity in pipes	Creating
3	V	PC323CE	Structural Engineering Design and Detailing	CO1	Define the characteristic strength of materials and partial safety factors for load and materials. Explain the design philosophies of working stress method and Limit state method.	Remembering
				CO2	Apply the key concepts, theories and mathematical fundamentals to analyze and design the structural elements.	Applying
				CO3	Analyze the moment capacity of structural elements. Design the structural elements for flexure, shear and torsion	Analyzing
				CO4	Examine the serviceability of structural elements	Analyzing



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				CO5	Decide the safety of the design as per IS code specification to choose the more safe and economical design of a structural member.	Evaluating
				CO6	Design simple structural members to be able to safely resist bending, shear, torsion, deflection and compression within the imposed factors of safety	Creating
				CO1	Explain the classification of soils.	Understanding
4	V	PC324CE	Geotechnical Engineering	CO2	Calculate the Permeability and seepage in Soil.	Understanding
				CO3	Determine the Compaction characteristics in Soils.	Understanding
				CO4	Determine the Shear strength in Soils.	Understanding
				CO5	Explain and analyze the Earth pressures in Retaining Walls.	Analyzing
				CO6	Explain and analyze the stability of finite and infinite Earthen slopes.	Analyzing
				CO1	Define the essential components and function of the hydrologic cycle including precipitation, evaporation/evapotranspiration, infiltration.	Remembering
5	V	PC325CE	Hydrology & Water Resources Engineering	CO2	Explain different methods that can be used to measure rainfall and flow, as well as their relative advantages and disadvantages and find out average rainfall in a catchment area	Understanding
				CO3	Develop relationship between Rainfall-Runoff using hydrograph, flood frequency analysis, empirical methods rational method, and SCS-CN method	Understanding
				CO4	Analyzing ground water resources for different hydro-geological boundary conditions and explain the basic aquifer parameters	Analyzing
				CO5	Categorize different uses of water and determine the crop water requirement	Analyzing
				CO6	Analyzing the knowledge for various concepts of canal design.	Analyzing
				CO1	Demonstrate the highway classifications, policy recommendations, surveys and factors controlling the highway alignment	Understanding
6	V	PC326CE	Transportation Engineering	CO2	Distinguish the geometric elements of highways, traffic engineering and controlling characteristics, and pavement material Characteristics.	Analyzing
				CO3	Analyze the geometrical elements of highways and pavements design factors as per standard recommendations	Analyzing



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				CO4	Identify the functions of pavement components, functions and methods of testing the pavement materials.	Applying
				CO5	Classify the engineering studies carried for traffic engineering and highway design	Understanding
				CO6	Illustrate elements of railway engineering and Airport engineering	Understanding
				CO1	Explain the flow and fluid properties	Understanding
7	V	PC351CE	Fluid Mechanics Lab	CO2	Identify the competence in working principles of notch, orifice, mouth piece, and venturi meter.	Applying
				CO3	Assess the flow measuring devices used in pipes, channels and tanks.	Evaluating
				CO4	Classify the Laminar and Turbulent flows.	Understanding
				CO5	Apply the practical knowledge of fluid mechanics in engineering field problems.	Applying
				CO6	Analyse the friction factors and its applications in pipe flow.	Analysing
				CO1	Determine the Index properties of Soil	Evaluating
8	V	PC352CE	Geotechnical Engineering Lab	CO2	Determine the Atterberg's limits of fine-grained Soil	Evaluating
				CO3	Identify and classify the soil the soil	Analysing
				CO4	Calculate the Permeability of Soils	Analysing
				CO5	Determine the Engineering properties of Soil	Evaluating
				CO6	Determine the Shear Parameters of Soil by Direct Shear Test	Evaluating
				CO1	Identify the grade & properties of bitumen	Applying
9	V	PC353CE	Transportation Engineering Lab	CO2	Create the awareness about various traffic studies in the field	Creating
				CO3	Find out peak hour traffic & peak time for a given location on the road	Remembering
				CO4	Find design speed, maximum speed & minimum speed limits of a location through spot speed	Remembering
				CO5	Identify engineering properties of aggregate	Applying
				CO6	Explain mix design of bitumen and CBR test etc.	Understanding
				CO1	Explain the objectives and Functions of Construction Management	Understanding
1	VII	PC 40	Co nst ru	CO1	Explain the objectives and Functions of Construction Management	Understanding



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				CO2	Develop the time scheduling using PERT and CPM	Applying
				CO3	Analyze the cost time in network planning,	Analyzing
				CO4	Estimate The optimistic time for the completion of a Project.	Creating
				CO5	Classify types of contracts, List the advantages and disadvantages of types of contracts. Explain Tender forms documents etc, Understand project models – BOT, BOOT, PPP.	Understanding
				CO6	Develop linear program for optimization, Create graphical method linear programming in construction.	Creating
				CO1	Demonstrate and recognize the importance of materials used in PSC work and to demonstrate the prestressing methods and techniques	Understanding
2	VII	PC402CE	Prestressed Concrete	CO2	Explain the behavior of a PSC beam section under given prestress and loads and identify the losses in prestressing	Understanding
				CO3	Extend the knowledge of analysis to Design a PSC beam section for the given conditions.	Understanding
				CO4	Analyze the Shear failure of a PSC beam and outline the procedure for safe shear design of PSC beams	Analyzing
				CO5	Determine the deflections which occur in PSC elements and Compare the short term and long-term deflection	Creating
				CO6	Assess the extent of bursting tension in the end block of a PSC beam and develop the method of strengthening the end block	Creating
				CO1	Apply up-to-date information for planning and operation of urban transport.	Applying
3	VII	PE402CE	Urban Transportation Planning	CO2	Illustrate a variety of travel surveys and data collection procedures	Understanding
				CO3	Explain optimization techniques for Transport Planning	Understanding
				CO4	Explain trip distribution and mode split models	Understanding
				CO5	Solve travel demand forecasting problems.	Applying
				CO6	Recommend most appropriate transport modes based on performance evaluation.	Creating



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4	VII	PE404CE	Disaster Mitigation and Management	CO1	Attain knowledge on various types, stages, phases in disaster with international & national policies & programmes with reference to the disaster reduction	Understanding
				CO2	Illustrate various types of natural disaster, their occurrence, Effects, Mitigation and Management Systems in India	Understanding
				CO3	Explain different types of manmade disasters, their occurrence, Effects, Mitigation and Management Systems in India	Understanding
				CO4	Apply the utility of geographic information systems (GIS), Remote sensing technology in all phases of disaster mitigation and management	Applying
				CO5	Explain on the concepts of risk, vulnerability, warning and forecasting methods in disaster management	Understanding
				CO6	Illustrate the role of education and training in disaster prevention.	Understanding
5	VII	PE406CE	Retrofitting and Rehabilitation of Structures	CO1	Explain the various definitions related to building repair and maintenance and describe the of maintenance works in buildings.	Understanding
				CO2	Describe and contrast the types of defects and damages in structures, according to their causes, and their preventive measures.	Understanding
				CO3	Describe and explain the various deterioration mechanisms in concrete and steel structures, including their causes and prevention.	Understanding
				CO4	Differentiate and summarize the various non-destructive tests and condition assessment procedures, and their specific applicability.	Understanding
				CO5	Discuss the various types of repair materials, compatibility considerations and techniques used in the repairs of structures.	Understanding
				CO6	Describe and explain the various retrofitting and rehabilitation procedures used for strengthening of damaged structures	Understanding
6	VII	PE408CE	Geographic Information Systems ad	CO1	Classify the different types of satellites and sensors used in remote sensing	Understanding
				CO2	Illustrate the energy interactions with earth surface features and their spectral properties	Understanding
				CO3	Demonstrate the basic concept of GIS and its applications	Understanding



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				CO4	Explain the different types of data representations in GIS	Understanding
				CO5	Create the spatial data using various techniques	Understanding
				CO6	Develop models using spatial & terrain analysis	Understanding
7	VII	OE421ME	Entrepreneurship	CO1	Explain Industrial environment and challenges associated with entrepreneurship, small- and large-scale industries, Economic development and growth	Understanding
				CO2	Identify characteristics of entrepreneurs, first generation and women entrepreneurs, evaluation of ideas and technology	Remembering
				CO3	Analyzing project formulation, financial and technical analysis	Analyzing
				CO4	Evaluate profitability and financial analysis	Evaluating
				CO5	Explain and Describe concepts of Intellectual property rights and patents	Applying
				CO6	Comprehend the aspects of Start-Ups	Understanding
8	VII	OE403IT	Cyber Security	CO1	Exhibit the knowledge in security principles, security architectures and components	Understanding
				CO2	Classify and assess different cyber-attacks and vulnerabilities	Understanding
				CO3	Identify the different cybercrimes and frauds	Understanding
				CO4	Suggest necessary IT security controls, Plans and procedures for an organization	Understanding
				CO5	Compare our cyber laws with international laws and able to practice ethics in cyber-World	Understanding
9	VII	PW401CE	Project -I	CO1	Identify and collect technical and research literature relevant to the topic of the Project	Understanding
				CO2	Review, classify and explain the findings from the literature relevant to project topic.	Understanding
				CO3	Identify the problem to be solved based on literature review and outline the objectives of the project	Analyzing
				CO4	Demonstrate communication and presentation skills in explaining literature review, objectives and solution methodology	Analyzing



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				CO5	Identify and demarcate clearly the contribution towards work done in individuals and teamwork	Understanding
				CO6	Make use of documentation and presentation tools to formulate and prepare an effective project report, with proper citations and references	Applying



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1	IV	HS103CM	Finance and Accounting	Mr. Shyan Sunder & Mrs. Manjula Shiba Rani	CO1	Illustrate the financial and accounting aspects of a business.	Understanding
					CO2	Evaluate financial Performance of the business unit.	Evaluating
					CO3	Illustrate about the financial system and markets.	Understanding
					CO4	Evaluate the viability of projects by using Capital budgeting Techniques.	Evaluating
					CO5	Analyse the overall financial functioning and long-term investment	Analyzing
2	IV	HS102CE	Effective Technical Communication in English	Mrs. A. L. Jayashree	CO1	Define the fundamentals of technical communication and relate the knowledge to differentiate between general and technical writing	Remembering
					CO2	Demonstrate the ability to choose the right mode of written communication in official correspondence.	Understanding
					CO3	Classify various types of reports to competently use them based on the requisite.	Analyzing
					CO4	Determine the importance of using and writing different kinds of manuals along with their classification.	Evaluating
					CO5	Make use of various kinds of visual-aids and develop the skill to use them appropriately in their presentations.	Applying



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3	IV	ES304CE	Engineering Geology	Ms. M. Madhuri	CO6	Compile both oral and visual presentation skills to be able to adapt to the changing scenario of the present day.	Creating
					CO1	Define the process of weathering, formation of minerals, rocks, soil and concept of geomorphology and how they relate with each other	Remembering
					CO2	Illustrate the features of minerals and rocks, geological structures like faults, folds, joints, in construction field to determine the problems that they may arise because of their presence.	Understanding
					CO3	Demonstrate site investigation techniques and scientific exploration methods in identification of geological structures like Folds, faults and Joints and geological features like ground water, properties and behavior of rocks, soil types.	Understanding
					CO4	Interpret rock properties for their suitability in various construction applications and concepts to apply the knowledge of engineering geology with reference to case studies in civil engineering	Understanding
					CO5	Illustrate the geological problems in dams, reservoirs and tunnels.	Understanding
					CO6	Explain the geological causes, merits & demerits of earthquakes, tsunamis and landslides.	Understanding
4	IV	PC405CE	Mechanics of Materials	Dr. Akshay S. K. Naidu	CO1	Calculate the deflections of determinate beams due to transverse loads by Double integration, Macaulay's, Moment-Area and Conjugate Beam methods	Applying



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					CO2	Calculate the crippling load of columns for various end conditions using different formulas based on Euler's, Rankine's and secant theories	Applying
					CO3	Analyse unsymmetrical bending in beams to locate the neutral axis and bending stresses at various locations, and also to identify the location of the shear center in thin unsymmetrical sections	Analyzing
					CO4	Compute the static and kinematic indeterminacy of beams and pin-jointed frames.	Applying
					CO5	Analyse the indeterminate beams, such as Propped Cantilever, Fixed Beam and Continuous beams by the method of consistent deformation (force method)	Analyzing
					CO6	Analyse the beams and pin-jointed frames (trusses) to find deflections by energy methods such as Castigliano's theorem and Unit Load Method	Analyzing
					CO1	Explain the significance of Reynold's experiment, Hagen Poiseuille Equation, Darcy Weisbach Equation, Hydraulic Jump, Rayleigh and Buckingham Pi theorem.	Understanding
5	IV	PC406CE	Hydraulic Engineering	Ms. Shipali Preeti Aind	CO2	Define the different types of Pumps and Turbines on the basis of principle on which it works.	Remembering
					CO3	Make Use of the knowledge in selection of hydraulic turbines and pumps, most economical channel, application of Hydraulic jump.	Applying
					CO4	Apply the basic principles in the design of most economical channel, creating hydraulic jump.	Applying



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6	IV	PC407CE	Design of Reinforce Concrete Structures	Mr. P. Srikanth & Mr. M. Mary Soujanya	CO5	Analyse the turbine/pump laws and constant for hydraulic design.	Analyzing
					CO6	Develop the pipe network systems with given friction and velocity in pipes	Creating
					CO1	Interpret the behavior and properties of different materials used in concrete, Loads acting on the different structural elements and their combinations as per IS 456 and Structural Design methods (WORKING STRESS METHOD and LIMIT STATE METHOD).	Understanding
					CO2	ANALYSE the Stress block parameters in both WSM and LSM.	Analyzing
					CO3	Design of members subjected to Flexure, shear and torsion (Beams and Slabs).	Creating
					CO4	Design of members subjected to shear and torsion.	Creating
7	IV	PC408CE	Hydrology	Dr. Badita Naik	CO5	Design of members subjected to Compression (Columns).	Creating
					CO6	Design of Footings.	Creating
					CO1	Define the essential components and function of the hydrologic cycle including precipitation, evaporation/evapotranspiration, infiltration.	Remembering
					CO2	Explain different methods that can be used to measure rainfall and flow, as well as their relative advantages and disadvantages and find out average rainfall in a catchment area	Understanding
					CO3	Explain different methods to measure the various components of water cycle	Understanding



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8	IV	ES355CE	Engineering Geology Laboratory	Ms. M. Madhuri & Mrs . P. Prasanna Kumari	CO4	Develop relationship between Rainfall-Runoff using hydrograph, flood frequency analysis, empirical methods rational method, and SCS-CN method	Applying
					CO5	Analyzing ground water resources for different hydro-geological boundary conditions and explain the basic aquifer parameters	Analyzing
					CO6	Categorize different types of Irrigation methods and determine the crop water requirement	Applying
					CO1	Illustrate Maps, Minerals, Rocks their features and classification	Understanding
					CO2	Interpret the structural geological problems	Understanding
					CO3	Demonstrate the working process of clinometer compass for study the geological structures.	Understanding
9	IV	PC453CE	Mechanics of Material Laboratory	Mrs. M. Mary Soujanya & Mr. P. Srikanth	CO4	Identify the megascopic properties of minerals and rocks.	Applying
					CO5	Make use of Stereoscopes, Images and maps to study the features like landforms, waterbodies and vegetation	Applying
					CO6	Distinguish the geological features of a site and prepare a report.	Analyzing
					CO1	Examine behavior of a ductile material under direct tension test and determine elastic properties using the stress-strain curve and Hooke's law	Applying
					CO2	Determine the hardness of various metals like steel, brass, copper, aluminum etc.	Applying
					CO3	Calculate the compressive strength of different engineering materials	Applying



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 (An UGC-AUTONOMOUS INSTITUTION)



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Estd : 2008

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S.no	Semester	Course Code	Course Name	Course Instructor	COURSE OUTCOMES		Bloom's Taxonomy Level
					Co No	Course Outcome	
					CO4	Determine the flexural properties of beams (simply supported, cantilever and fixed) made of different materials like wood, steel, copper etc.	Applying
					CO5	Determine the Spring stiffness, Capacity and shear modulus using the Tension and Compression tests on Springs	Applying
					CO6	Evaluate the impact resistance capacity and energy absorption of various materials using impact tests	Evaluating
10	IV	PC454CE	Hydraulic Engineering Laboratory	Ms Shipali Preeti Aind	CO1	Explain the flow and fluid properties	Understanding
					CO2	Identify the competence in working principles of hydraulic pumps and turbines	Applying
					CO3	Assess the flow measuring devices used in pipes, channels and tanks.	Evaluating
					CO4	Classify the types of hydraulic jump.	Understanding
					CO5	Apply the practical knowledge of fluid mechanics in engineering field problems.	Applying
					CO6	Analyse the forces acting due to jets and its applications in hydraulic machines	Analyzing
1	VI	PC331CE	Environmental Engineering	Mr. G. Anudeep	CO1	Interpret and design the sludge disposal systems and septic tanks	Remembering
					CO2	Categorize air and noise pollution impacts and standards.	Understanding
					CO3	Characterize sewage systems and design sewers and appurtenances.	Applying
					CO4	Forecast water demands for water supply in the social context.	Analyzing



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2	VI	PC332CE	Estimation and Specifications	Mr. Shaik Mohammad Imran & Mrs. S. Deva Samyuktha	CO5	Design environmental engineering systems including the considerations of risk and environmental impacts.	Creating
					CO6	Apply the knowledge for designing of water and septic tanks for the commodities.	Applying
					CO1	Define types of estimates, tenders, contracts and different specifications required for construction works and costs in bidding.	Remembering
					CO2	Outline the procedures adopted for tendering, bidding and allotment of contracts and the role of IT in tenders.	Understanding
					CO3	Demonstrate standard available procedures and forms like Measurement books, Muster roll, bill of quantities, Schedule of rates in estimation works.	Remembering
					CO4	Analyze rates of different items of work based on specifications using Schedule of rates.	Understanding
3	VI	PE303CE	Foundation	Ms. S. Vedhasri	CO5	Define Valuation, Principles of valuation, phases in value engineering, Settlement of disputes, R.A. Bill & Final Bill, Payment, Introduction to Acts pertaining to- Minimum wages, Workman's compensation.	Remembering
					CO6	Develop an estimate of quantities of different items for buildings, roads, irrigation structures and different civil engineering structures and make use of software's for estimation.	Applying
					CO1	Discuss and calculate the stress distribution in soils.	Applying



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					CO2	Classify the types of Foundations and to calculate their Bearing capacity.	Analyzing
					CO3	Discuss & Design of various types of Pile Foundation and well foundation.	Creating
					CO4	Discuss the necessity of Geotechnical Investigations.	Understanding
					CO5	Discuss about the Foundation related aspects.	Understanding
					CO6	Categorize and outline various records of Investigation for Foundations.	Analyzing
					CO1	Analyse and design a flat slab system.	Analyzing
4	VI	PE305CE	Design of Concrete Structures - I	Mrs. Shaista Begum	CO2	Design rectangular combined footing and understand the principles of design of trapezoidal footing with limit state method according to IS 456: 2000	Creating
					CO3	Design of cantilever type and counter fort type retaining walls	Creating
					CO4	Analysis and design of curved beams	Analyzing
					CO5	Analyze tank wall against water pressure when it is resting on the ground having a circular and rectangular shape.	Analyzing
					CO6	Analysis and Design of Portal frames and Building frames	Analyzing
					CO1	Apply the Knowledge of traffic forecasting principles, methods & demand relationships for future projection.	Applying
5	VI	PE306CE	Traffic Engineering and	Ms. Madhuri	CO2	Determine Price- Volume relationships, demand functions, PCU and Design hourly volume for	Analyzing



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						varying demand conditions by applying the concept of Design vehicle unit	
					CO3	Interpret level of service and capacity for different highway facilities with help of case studies	Applying
					CO4	Analyze the accident individually and statistically considering the Accident Rate, Influencing Factors, Accident Coefficients and Driver stain conditions	Analyzing
					CO5	Explain Traffic Flow theory, and their Fundamental applications Traffic Management methods	Understanding
					CO6	Explain Traffic Management methods	Understanding
					6	VI	OE 601 EG
CO2	Enable the students to develop the required speaking skills as per the necessary objective in Professional Communication	Understanding					
CO3	Equip the students with appropriate reading, comprehending & summarizing strategies for the prescribed professional assignment	Understanding					
CO4	Develop professional writing & publishing varieties of documents and required skills among students	Understanding					
CO5	Empower the students with the Right Attitude and Coping Techniques required Professionally and to inculcate potential skills in the learners to prepare them to deal with the external world in a collaborative manner, communicate effectively,	Understanding					



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						take initiative, think creative, manage stress, solve problems, demonstrate a positive work ethic and facilitate life-long learning	
7	VI	OE 602 MB	Human Resource Development and Organizational Behavior	Swathi Mam	CO1	Explain the principles and practices of management and specifically the nature of management functions, roles and skills.	Understanding
					CO2	Illustrate the process of decision making and its models.	Understanding
					CO3	Inculcate knowledge on personality, perception and theories of motivation.	Analyzing
					CO4	Analyze the behavior of individual and groups in organizations in terms of organizational behavior theories, models and concepts.	Analyzing
					CO5	Illustrate the concept of organization design, organization climate, organization culture, various aspects of Organization Behavior and importance of communication process.	Understanding
					CO6	Apply the management thoughts at work place	Applying
8	VI	PC361CE	Environmental Engineering Laboratory	Dr. K. Santosh Kumar	CO1	Determine physical, chemical and biological characteristics of water and wastewater	Evaluating
					CO2	Outline the procedure for preparations of stock and standard solutions, their handling, storage, etc	Understanding
					CO3	Determine break - point chlorination	Evaluating
					CO4	Assess the suitability of water for drinking, irrigation purpose and concreting works.	Evaluating



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9	VI	PC362CE	Computer Aided Civil Engineering Drafting, Analysis & Design Lab	Mrs. Shaista Begum & Mr. Shaik Mohammad Imarn	CO5	Determine the BOD, COD and bacterial density of portable water.	Evaluating
					CO6	Assess the quality of water and wastewater	Evaluating
					CO1	Explain the application of software's in civil engineering.	Understanding
					CO2	Analysis and design of structural members using software techniques.	Analyzing
					CO3	Development of programs for Design of Structural elements using Excel	Creating
					CO4	Development of programs for Design of Structural elements using C-Language	Creating
10	VI	PC363CE	Hydraulics Laboratory	Mr. G. Anudeep & Ms. S. Vedhasri	CO5	Use of software knowledge for solving Geo technical related problems	Understanding
					CO6	Analyze structural elements using STAADPRO	Creating
					CO1	Explain the flow and fluid properties	Analyzing
					CO2	Identify the competence in working principles of hydraulic pumps and turbines	Applying
					CO3	Assess the flow measuring devices used in pipes, channels and tanks.	Evaluating
					CO4	Classify the Laminar and Turbulent flows.	Understanding
1	VIII	MC	Gender Sensit	Mrs. j. R. Hephzbah	CO5	Apply the practical knowledge of fluid mechanics in engineering field problems.	Applying
					CO6	Analyse the forces acting due to jets and its applications in hydraulic machines	Analyzing
					CO1	Develop a better understanding of important issues related to gender in contemporary India.	Understanding



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					CO2	Change the basic dimensions of the biological. Sociological, psychological and legal aspects of gender through discussions, facts, everyday life, literature and film	Applying
					CO3	Analyze how gender discrimination works in our society and how to counter it.	Analyzing
					CO4	Identify and plan better ways of working and living together as equals.	Applying
					CO5	Develop a sense of appreciation of women in all walks of life	Evaluating
					CO6	Enable in developing good interpersonal relationships at work places and to develop a sustain interest in gender equality	Creating
					CO1	Define the impacts of climate change on natural environment.	Remembering
2	VIII	PE410CE	Principles of Climate Change	Mr. Shaik Mohammad Imran	CO2	Explain the fundamentals of climate system and global water balance	Understanding
					CO3	Apply the Knowledge of climate changes and its impact on Monsoon and Hydrology	Applying
					CO4	Take part in introduction of climate modelling especially using statistical downscaling techniques.	Analyzing
					CO5	Select correction methods in climate science.	Applying
					CO6	Identify international initiatives which support countries to plan for climate change.	Applying
					CO1	Examine concrete quality based on its properties at fresh stage and hardened stage	Applying
3	VIII	PE413CE	Concrete Technology	Mrs. M. Mary Soujanya	CO2	Interpret the effects of creep and shrinkage on concrete durability	Analyzing



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					CO3	Design the concrete mix using IS code method, British code and ACI code method.	Applying
					CO4	Identify the use of special concretes based on their properties in different situations.	Understanding
					CO5	Classify the various components of precast technology and the various types of prefabricated components	Understanding
					CO6	Illustrate the microstructure of concrete with all its phases.	Analyzing
					CO1	Explain the concept of Intelligent Transportation Systems	Understanding
					CO2	Describe the concepts of system architecture and their evolution.	Understanding
4	VIII	PE415CE	Intelligent Transportation Systems	Mr. R. Srikanth	CO3	Explain the functional area of ITS	Understanding
					CO4	Explain impact of technology on different modes and movement	Understanding
					CO5	Discuss the capability of key technologies	Understanding
					CO6	Explain how to evaluate technologies, applications and services	Understanding
					CO1	Summarize in written form the literature study carried out with relevant data analysis, interpretation and problem identification for the selected project topic.	Understanding
					CO2	Identify the mathematical concepts, science concepts, engineering concepts and management principles necessary to solve the identified engineering problem	Applying
5	VIII	PW704CE	Project Work -II	Dr. Bandita Naik & Dr. Akshay S. K. Naidu			



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					CO3	Apply the identified concepts and identified engineering tools to arrive solutions for the identified engineering problem	Analyze
					CO4	Analyze and interpret results of experiments conducted on the designed solutions to arrive at valid conclusions	Evaluating
					CO5	Demonstrate written communication skill through the project report and oral communication skill through presentation of the project work	Understanding
					CO6	Demonstrate individual and teamwork skills in carrying out and managing the project work and abide by the norms of professional ethics.	Applying