RISE KRISHNA SAI PRAKASAM GROUP OF INSTITUTIONS::ONGOLE

(Approved by AICTE-NEW DELHI, Affiliated to JNTUK KAKINADA)
NH-16, Valluru,-523272, Ongole, Prakasam District, A.P

DEPARTMENT OF CIVIL

COURSE OUTCOMES

A Y:2017-18

I Year I Semester

CO No.	Subject: English-I	Taxonomy Level
After completing the course the student shall be able to		
C111.1	Explain the basic concepts of language useful for pupils in their career.	Applying
C111.2	Illustrate the usage of tenses in everyday life.	Understanding
C111.3	Apply the techniques of science through language ability in a practical way.	Applying
C111.4	Make use of grammatical sentences for perfect communication.	Creating
C111.5	Analyze the importance of future tense with examples.	Analyzing
C111.6	Find the speaking and writing skills through reading ability of safety measures.	Applying

CO No.	Subject: Mathematics-I	Taxonomy Level
After completing the course the student shall be able to		
C112.1	Find the solutions of first order ordinary differential equations.	Understanding
C112.2	Apply the technique of solving ordinary differential equations in some engineering problems like electrical circuits, simple harmonic motions etc.	Applying
C112.3	Define Laplace transform and inverse Laplace transform of various functions and solve ordinary differential equations using Laplace transform.	Applying
C112.4	Utilize the technique of partial differentiation to find the extreme values of functions of several variables.	Applying
C112.5	Find the solutions of linear and nonlinear partial differential equations of first order.	Understanding
C112.6	Solve the higher order linear partial differential equations.	Understanding

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CO No.	Subject ENGINEERING CHEMISTRY	Taxonomy Level
After completing the course the student shall be able to		
C113.1	Differentiate the plastics and rubber materials and their uses.	Analysing
C113.2	Explain the origin of fuel and their economic advantages and limitations.	understanding
C113.3	Explain the reasons for corrosion and its control methods.	understanding
C113.4	Describe the synthesis of nano materials and green methods.	understanding
C113.5	Explain the hardness of water and its softening techniques.	understanding
C113.6	Discuss the engineering materials like refractories,cement and lubricants.	understanding

CO No.	Subject: Engineering Mechanics	Taxonomy Level
After completing the course the student shall be able to		
C114.1	Recall the concept of force system, friction and its applications.	Remembering
C114.2	Construct the free body diagrams for different problems and solve the problems using the equilibrium conditions.	Applying
C114.3	Identify the centroid and centre of gravity for different composite sections.	Applying
C114.4	Solve the problems on moment of inertia, mass moment of inertia for different composite sections using parallel axis and perpendicular theorems.	Applying
C114.5	Summarize the motion of a body in general plane motion which includes rectilinear and curvilinear paths.	Understanding
C114.6	Recall the concept of work, power, and energy and calculate these values work-energy and impulse momentum principles.	Remembering

CO No.	Subject: Computer Programming	Taxonomy Level
After completing the course the student shall be able to		
C115.1	Explain the basic terminology used in computer programming	Understanding
C115.2	Discuss the design of Algorithms, writing and executing programs	Understanding
C115.3	Explain the different data types, selection and Basic loop structures	Understanding
C115.4	Apply the modular programming and recursive solution formulations.	Applying
C115.5	Demonstrate the data representations using arrays.	Applying
C115.6	Implement data structures, dynamic memory, create, update data files	Applying

CO No.	Subject: Environmental Studies	Taxonomy Level
After completing the course the student shall be able to		
C116.1	Explain the concepts of the ecosystem and its functions in the environment.	Understanding
C116.2	Summarize the natural resources and their importance for the sustenance of life & need to conserve the natural resources	Understanding
C116.3	Demonstrate the values, threats, conservation practices to protect the biodiversity.	Applying
C116.4	Describe various attributes of the pollution and their impacts and measures to reduce pollution along with waste management practices.	Understanding
C116.5	Evaluate social issues both rural and urban environment and the possible means to combat the challenges, with help of environmental legislations of India	Evaluation
C116.6	Implement Environmental Impact Assessment, Green campus, business, & politics in their daily life	Applying

CO No.	Subject: Engineering Chemistry Laboratory	Taxonomy Level
After completing the course the student shall be able to		
After completing the course the student shall be able to		
C117.1	Describe the experimental skills to design new experiments in engineering	Understanding
C 117.2	Explain tge different types of titrations and acquire skills in instrumentation	Understanding
C 117.3	Determine hardness of various water samples	Evaluating
C 117.4	Determine tge no of free ions and charges in a mixture of acids using conductivity meter	Evaluating
C 117.5	Calculate the potential between reference electrode and un known solution by using potentio meter	Understanding

CO No.	Subject: English-Communications Skills Lab-I	Taxonomy Level
After completing the course the student shall be able to		
C118.1	Explain the basic concepts of language useful for pupils in their career	Applying
C118.2	Illustrate the usage of tenses in everyday life.	Understanding
C118.3	Apply the techniques of science through language ability in a practical way.	Applying
C118.4	Make use of grammatical sentences for perfect communication	Creating
C118.5	Analyze the importance of future tense with examples	Analyzing
C118.6	Find the speaking and writing skills through reading ability of safety measures	Applying

CO No.	Subject: Computer Programming Lab	Taxonomy Level
After completing the course the student shall be able to		
C119.1	Explain the basic terminology of C programming development environment	Understanding
C119.2	Discuss the design of Algorithms, writing, compiling, debugging and executing Programs.	Understanding
C119.3	Analyzing the complexity of problems and modular programming	Analyzing
C119.4	Understand and apply the in-built and user defined functions for solving problems.	Applying
C119.5	Understand and apply the pointers and memory allocations techniques for solving Problems.	Applying
C119.6	Implement different data structures, and create, update data files	Applying

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DEPARTMENT OF CIVIL

COURSE OUTCOMES

A Y:2017-18

I Year II Semester

CO No.	Subject: English-II	Taxonomy Level
After completing the course the student shall be able to		
C121.1	Acquire the knowledge of education and how to serve the society accordingly	Remembering
C121.2	Classify the different perspective of science in the sense of a common man and scientist	Understanding
C121.3	Apply the knowledge to adjust ourselves towards the environmental conditions in the society	Applying
C121.4	Create an awareness on the present day and traditional beliefs	Applying
C121.5	Create the awareness on health threats due to climate changes.	Applying
C121.6	Identify the greatness and the hard work of the pioneers and try to inspire in attainting language communication skills	Remembering

CO No.	Subject: Mathematics-II (Mathematical Methods)	Taxonomy Level
After completing the course the student shall be able to		
C122.1	Understand the most basic numerical method to solve simultaneous linear equations.	Understanding
C122.2	Define interpolation and compute interpolating polynomial from the given data using interpolating formula.	Remembering
C122.3	Solve differential equations numerically using numerical methods.	Applying
C122.4	Understand the basic concepts of complex function and analytic functions using C-R equations.	Remembering
C122.5	Make use of Cauchy's theorem and Cauchy's Integral theorem to evaluate complex integration.	Applying
C122.6	Make use of residues to evaluate complex integration.	Applying

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CO No.	Subject: Mathematics-III	Taxonomy Level
After completing the course the student shall be able to		
C123.1	Applying analytical and numerical techniques to solve linear system of equations using matrices	Applying
C123.2	Find the Eigen values and Eigen vectors of the square matrices and discuss the nature of quadratic forms.	Remembering
C123.3	Applying the techniques of multiple integrals to find the areas and volumes.	Applying
C123.4	Find the values of definite integrals using Beta and Gamma functions.	Remembering
C123.5	Find the gradient of scalar point functions, divergence and curl of vector point functions.	Remembering
C123.6	Applying Green's, Stokes and Gauss's divergence theorems to find line, surface and volume integrals.	Applying

CO No.	Subject: Applied Physics	Taxonomy Level
After completing the course the student shall be able to		
C124.1	Explain the properties of light supporting the wave nature and working of optical instruments	Understanding
C124.2	Apply Lasers in scientific research and engineering by developing knowledge on basic principle in the working of Lasers & optical fibers.	Applying
C124.3	Describe the concept of Electrical or Electronic gadgets and their performance under E- or H- fields.	Understanding
C124.4	Explain the concept of Acoustics of Buildings, and the behavior of materials in the external magnetic and electric fields and physical significance of Maxwell's equations.	Understanding
C124.5	Explain the concept of matter waves, free electron theory and origin of energy band formation in solids .	Understanding
C124.6	Explain the intrinsic and extrinsic semiconductors ,drift ,diffusion currents in semiconductors.	Understanding

CO No.	Subject: Elements of Mechanical Engineering	Taxonomy Level
After completing the course the student shall be able to		
C125.1	Understand the basic concept of working of different types of boilers and their performance.	Understanding
C125.2	Learn what are the different types of metal joining and forming processes and have basic idea about casting and machine tools	Understanding
C125.3	Understand the working of different types of compressors and application of refrigeration.	Understanding
C125.4	Learn different types of i.c engines, their working and performance calculations.	Understanding
C125.5	Understand the power transmission by belts, ropes and chain drives	Understanding
C125.6	Understand the power transmission by gears and different types of gear trains	Understanding

CO No.	Subject: Engineering Drawing	Taxonomy Level
After completing the course the student shall be able to		
C126.1	Learn the usage of drawing instruments and how to draw Polygons, Engineering Curves and Scales	Remembering
C126.2	Explain about the Orthographic Projections, Projection of Points And Lines	Understanding
C126.3	Solve and draw the projections of straight lines inclined to both the planes	Applying
C126.4	Solve and draw the projection of planes	Applying
C126.5.	Solve and draw the projection of solids	Applying
C126.6	Draw the Isometric Views to Orthographic Views and vice versa	Applying

CO No.	Subject: English Communication Skills Lab-II	Taxonomy Level
After completing the course the student shall be able to		
C127.1	Explain the importance of body language	Understanding
C 127.2	Summarize the skill of general English through dialogue	Understanding
C 127.3	Develop short presentations on simple topics	Applying
C 127.4	Summarize training offered to students through Group Discussion	Analyzing
C 127.5	Describe the stand of interview skills through that students will successes	Remembering

CO No.	Subject: Applied Physics Lab	Taxonomy Level
After completing the course the student shall be able to		
C128.1	Explain the appropriate application of Optics in Newton rings	Understanding
C128.2	Explain the appropriate application of Optics in Diffraction Grating	Understanding
C128.3	Apply the basic concepts of laser and techniques for the optics experiments.	Applying
C128.4	Apply the mathematical concepts/equations to obtain quantitative results.	Applying
C128.5	Explain the basic concepts of semiconductor physics, which are useful to understand the operation of Zener diode and PN junction diode	Understanding
C128.6	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting	Evaluating

CO No.	Subject: Engineering Workshop & IT Workshop	Taxonomy Level
After completing the course the student shall be able to		
C129.1	Identify the different tools and prepare prototypes in the trades of Carpentry and Tinsmithy such as Cross half lap joint, Dove tail joint, rectangular Tray and Open scoop	Applying
C129.2	Identify the different tools and prepare prototypes in the trades of Fitting and Black smithy	Applying
C129.3	Apply the various House Wiring techniques such as connecting one lamp with one switch, connecting one lamp with two switches, connecting a fluorescent tube	Applying
C129.4	Apply the knowledge for computer assembling, software installation and trouble shoot and up gradation of system	Applying
C129.5	Learn MS-office package, internet tools and Apply the tools for preparation of PPT, Documentation and spread sheet etc	Applying

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DEPARTMENT OF CIVIL ENGINEERING

Academic Year 2017-2018

II Year I Semester

CO No	Subject: Probability & Statistics	Taxonomy level
Student should be able to		
C2 11.1	Compare various discrete probability distributions	Evaluating
C2 11.2	Compare various continuous probability distributions	Evaluating
C2 11.3	Find the confidence interval for mean of a population	Applying
C2 11.4	Make use of tests of hypothesis for the null hypothesis concerning mean and proportions and perform ANOVA for one way and two-way classification	Understanding
C2 11.5	Apply correlation and regression lines of two variables for real life problems	Applying
C2 11.6	Construct control charts for variables and attributes	Analyzing
CO No	**Subject: Basic Electrical & Electronics Engineering**	**Taxonomy level**
Student should be able to		
C2 12.1	Apply the different laws in solving resistive, inductive capacitive networks and series – parallel circuits.	Applying
C2 12.2	Analyze the operation of DC generator, applications and conduct the Swinburne's test.	Analyzing
C2 12.3	Analyze the operation of DC generator, applications and conduct the Swinburne's test.	Evaluating
C2 12.4	Explain the operation of three phase alternator, three phase induction motor	Applying
C2 12.5	Analyze the operation of half- wave, full- wave and op-amps.	Evaluating
C2 12.6	Compare the operation of PNP and NPN transistors and various amplifiers	Analyzing
CO No	**Subject: Strength of Materials-I**	**Taxonomy level**
Student should be able to		
C213.1	Understand the basic materials behaviour under the influence of different external loading conditions	Understanding
C213.2	Analyze the shear force and bending moment diagrams for different types of beams subjected to different loads	Analyzing
C213.3	Acquire of bending concepts and calculation of section modulus and for determination of stresses developed in beams due to various loading conditions..	Applying
C213.4	Determine the shear stresses for the various beams subjected to different types of loads.	Understanding
C213.5	Analyze and calculate the deflection for different types of beams subjected to different types of loads.	Understanding
C213.6	Calculation of stresses for cylinders subjected to internal fluid pressure	Applying

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CO No	Subject: Building Materials & Construction	Taxonomy level
Student should be able to		
C2 1.1	Identify different building materials and their importance in building construction.	Analyzing
C2 1.2	Know the differentiate different types of masonry used in construction	Analyzing
C2 1.3	Can apply the different bonding materials used in construction	Analyzing
C2 1.4	Identify the importance of building components used in construction	Applying
C2 1.5	Identify the importance of finishing's used in construction	Evaluating
C2 1.6	Know the different types of aggregates and their properties	Analyzing
CO No	**Subject: Surveying**	**Taxonomy level**
Student should be able to		
C2 1.1	Discuss the basics of surveying	Understanding
C2 1.2	Calculate the distance and direction using various methods such as Chain , Compass, Levelling and Theodolite surveying	Understanding
C2 1.3	Use levelling instruments and discuss the various methods of contouring	Applying
C2 1.4	Demonstrate the Theodolite instrument and Tacheometric surveying	Understanding
C2 1.5	Determines the curve setting out by linear and angular methods in civil engineering projects road & rail way. Prepare a topographical map by using total station.	Evaluating
C2 1.6	Compute areas and volumes of earth work	Analyzing
CO No	**Subject: Fluid Mechanics**	**Taxonomy level**
Student should be able to		
C216.1	Discuss the properties of fluids, laws of pressure & pressure measurement.	Understanding
C216.2	Calculate buoyancy force sub merged in water and the fluid flows	Understanding
C216.3	Derive Euler's and Bernoulli's equation of motion in bending of pipes	Understanding
C216.4	Calculate energy losses in pipe by various theories	Applying
C216.5	Analyze flow measurement in notches and weirs	Applying
C216.6	Illustrate theory of boundary layer and their forces using Vonkaram integral method, Prandtl's analysis	Understanding

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II Year II Semester

CO No	Subject: Building Planning And Drawing	Taxonomy level
Student should be able to		
C221.1	Explain the building byelaws and regulations	Analyzing
C221.2	Discuss the minimum standards for various parts of residential buildings	Analyzing
C221.3	Discuss and sketch the public buildings	Applying
C221.4	Identify the sign conventions of building materials and bonds of brick walls	Applying
C221.5	Sketch the doors, windows, ventilators and roofs	Analyzing
C221.6	Sketch the plan, elevation and sections of a residential and buildings	Analyzing
CO No	**Subject: Strength Of Materials – II**	**Taxonomy level**
Student should be able to		
C222.1	Understand the basic concepts of principal stresses developed when subjected to stresses along different axis and design the sections.	Understanding
C222.2	Asses the stresses in shafts and springs subjected to different loading conditions.	Evaluating
C222.3	Calculate the crushing load for columns and structs for different end conditions.	Analyzing
C222.4	Calculate the stresses in columns and check stability of dams, retaining walls and chimneys	Applying
C222.5	Analyze the stresses in unsymmetrical sections	Applying
C222.6	Asses member forces in trusses by using method of joints and sections	Analyzing
CO No	**Subject: Hydraulics & Hydraulic Machinery**	**Taxonomy level**
Student should be able to		
C223.1	Solve Uniform open channel flow problems	Creating
C223.2	Solve Non-uniform open channel flow problems	Evaluating
C223.3	Apply the principle of dimensional analysis and similitude in hydraulic model testing	Analyzing
C223.4	Understand the working principle of impact of jets	Applying
C223.5	Understand the working principle of turbines and its applications	Remembering
C223.6	Understand the working principle of Pumps and its applications	Understanding
CO No	**Subject: Concrete Technology**	**Taxonomy level**
Student should be able to		
C224.1	Utilize all ingredients of concrete and admixtures.	Understanding
C224.2	Categorize different properties of fresh concrete by different methods.	Understanding
C224.3	Predict the different characteristics of harden concrete by various methods.	Understanding
C224.4	Identify various properties of Elasticity, Creep & Shrinkage of harden concrete.	Analyzing
C224.5	Analyze various mix designs with respect to different water cement ratios.	Analyzing

C224.6	Discuss various properties of Special Concrete and High performance concrete.	Understanding
CO No	**Subject: Structural Analysis – I**	**Taxonomy level**
Student should be able to		
C225.1	Explains the analysis of propped cantilevers and calculation of deflections.	Creating
C225.2	Estimate the bending moment and shear forces in beams for different fixity conditions.	Creating
C225.3	Describes the analysis of continuous beams with different moment of inertia.	Applying
C225.4	Explains slope deflection method for analyzing the continuous beams with settlements.	Analyzing
C225.5	Describes Strain energy and its theorems to calculate deflections.	Analyzing
C225.6	Explains moving loads and Influence lines for calculating maximum bending moment and shear force.	Understanding
CO No	**Subject: Transportation Engineering – I**	**Taxonomy level**
Student should be able to		
C226.1	Understand the theory of highway development, planning & alignment.	Remembering
C226.2	Analyse the geometric design of highway and used in different terminology of highway.	Applying
C226.3	Remember the basic terminology used in traffic engineering.	Understanding
C226.4	Acquire the knowledge of highway materials used.	Understanding
C226.5	Analyse the design considerations for different types of pavements.	Applying
C226.6	Ensure the knowledge of highway construction & management.	Understanding

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III Year I Semester

CO No	Subject: Engineering Geology	Taxonomy level
Student should be able to		
C3 11.1	Know the importance of geology in civil engineering field with case studies and weathering process of rocks	Analyzing
C3 11.2	Get the knowledge of different rocks, minerals and its properties	Analyzing
C3 11.3	Know the different terminology of rock minerals, types, mechanism and importance in civil engineering	Understanding
C3 11.4	Explore the knowledge of ground water terms, movement & its techniques and classify, measure the landslides	Applying
C3 11.5	Analyse the ground conditions, potential of ground water through geophysical survey	Applying
C3 11.6	Investigate the site selection for mini/mega and engineering projects like dams, tunnels etc.	Applying
CO No	**Subject: Structural Analysis –II**	**Taxonomy level**
Student should be able to		
C3 12.1	Analyse the different types arches and to calculate the bending moment ,normal thrust and radial shear	Analyzing
C3 12.2	Analyse the lateral loads are acting in the framed structures.	Analyzing
C3 12.3	Determine the stresses in anchors , cables and suspension bridges and also calculate shear and bending in stiffening girders	Creating
C3 12.4	Analyze the structures using moment distribution method	Creating
C3 12.5	Analyze the structures using kani's method	Applying
C3 12.6	Analyze the structures using advanced matrix methods	Analyzing
CO No	**Subject: Design & Drawing of Reinforced Concrete Structures**	**Taxonomy level**
Student should be able to		
C313.1	Classify the different types of design philosophies (working stress and limit state methods)	Analyzing
C313.2	Analyse & Design flexural members in limit state method.	Evaluating
C313.3	Design flexural members for collapse and serviceability conditions.	Analyzing
C313.4	Analysis & Design various types of slabs.	Evaluating
C313.5	Design different types of compression members.	Understanding
C313.6	Design different types of footings.	Applying
CO No	**Subject: Geotechnical Engineering – I**	**Taxonomy level**
Student should be able to		
C314.1	Know the definitions and identify the various quantities related to soil mechanics and its relationship	Applying
C314.2	Classify the soils and know the methods of determination of various index properties of soil	Analyzing
C314.3	Study the importance of engineering properties of soils and their	Applying

	determination by laboratory methods	
C3 14.4	Analyse the stresses induced by different loads and its distribution by different theories	Understanding
C3 14.5	Study the consolidation characteristics of soil and its determination through laboratory methods	Applying
C3 14.6	Study the significance of shear strength of soils and its determination through various methods	Applying
CO No	**Subject: Transportation Engineering – I**	**Taxonomy level**
Student should be able to		
C3 15.1	Understand the theory of highway development, planning & alignment.	Applying
C3 15.2	Analyse the geometric design of highway and used in different terminology of highway.	Analyzing
C3 15.3	Remember the basic terminology used in traffic engineering.	Creating
C3 15.4	Acquire the knowledge of highway materials used.	Understanding
C3 15.5	Analyse the design considerations for different types of pavements.	Applying
C3 15.6	Ensure the knowledge of highway construction & management.	Understanding
CO No	**Subject: IPR & P**	**Taxonomy level**
Student should be able to		
C3 16.1	Outline different types of Intellectual Properties (IPs), the right of ownership, scope of protection as well as the ways to create and to extract value from IP.	Analyzing
C3 16.2	Recognize the crucial role of IP in organizations of different industrial sectors for the Purposes of product and technology development.	Applying
C3 16.3	Identify activities and constitute IP infringements and the remedies available to the IP owner.	Analyzing
C3 16.4	Describe the precautious steps to be taken to prevent infringement of proprietary rights.	Analyzing
C3 16.5	Understand importance of IP in products and technology development.	Understanding
C3 16.6	Discuss with the processes of Intellectual Property Management (IPM) and various approaches for IPM	Applying

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III Year II Semester

CO No	Subject: Design & Drawing of Steel Structures	Taxonomy level
Student should be able to		
C321.1	Draw and design various types of beam-column connections and work with relevant IS codes.	Analyzing
C321.2	Carryout Analysis and design of flexural members by applying checks for deflection, shear, buckling and bearing.	Applying
C321.3	Design Tension members, compression members and various components of trusses.	Applying
C321.4	Demonstrate and draw stiffening of columns by the use of splicing, lacings and battens.	Understanding
C321.5	Design and draw column foundations.	Understanding
C321.6	Design and draw plate girder and gantry girder with connection detailing.	Creating
CO No	**Subject: Geotechnical Engineering – II**	**Taxonomy level**
Student should be able to		
C322.1	Discuss the methods of soil exploration and need for soil exploration	Analyzing
C322.2	Understand the concept of earth retaining structures by suitable theories.	Analyzing
C322.3	Analyze the settlement criteria in shallow foundations by plate load test and bearing capacity of soil by various methods.	Evaluating
C322.4	Discuss the types of pile foundations and their groups	Evaluating
C322.5	Analyse the different forces acting on well foundation and its shapes	Analyzing
C322.6	Discuss stability analysis by various methods.	Understanding
CO No	**Subject: Water Resource Engineering -I**	**Taxonomy level**
Student should be able to		
C323.1	Understand the theory of hydrologic cycle and analyse the precipitation data by using different methods.	Remembering
C323.2	Estimate the hydrologic components such as evaporation, transpiration and infiltration.	Understanding
C323.3	Determine the storage capacity using direct runoff and develop corresponding hydrographs.	Analyzing
C323.4	Estimate flood magnitude and carry out flood routing.	Analyzing
C323.5	Determine aquifer parameters and yield of wells.	Analyzing
C323.6	Simulate the hydrologic process using different techniques.	Applying
CO No	**Subject: Environmental Engineering -I**	**Taxonomy level**
Student should be able to		
C324.1	Classify the types of water demands and estimate population forecasting using different methods.	Evaluating
C324.2	Identify the sources of water, collection & conveyance of water.	Evaluating
C324.3	Examine the characterization of water.	Understanding

C324.4	Selection of suitable treatment flow for raw water treatment.	Understanding
C324.5	Discuss the theory of chlorination and other disinfection methods.	Evaluating
C324.6	Select the appropriate appurtenances in the water supply.	Understanding
CO No	**Subject: Transportation Engineering – II**	**Taxonomy level**
Student should be able to		
C325.1	Understand the components of railway track.	understanding
C325.2	Design geometrics in a railway track.	Analyzing
C325.3	Provide a good transportation network.	Analyzing
C325.4	Design the runway and its components.	Applying
C325.5	Design airport geometrics and airfield pavements.	Understanding
C325.6	Plan, construct and maintain Docks and harbours.	Evaluating
CO No	**Subject: Environmental Pollution & Control**	**Taxonomy level**
Student should be able to		
C326.1	Identify the control methods and quality standards for Air and Noise Pollution	Understanding
C326.2	Determine the methods to dispose solid waste generating from various sources	Applying
C326.3	Indicate strategies and treatment for industrial wastewater	Creating
C326.4	Infer various environmental sanitation disposal methods	Understanding
C326.5	Discuss the characterization, treatment and management of hazardous waste	Creating
C326.6	Illustrate different sustainable development elements and strategies	Creating

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IV Year I Semester

CO No	Subject: Environmental Engineering-II	Taxonomy level
Student should be able to		
C411.1	Design the suitable sewerage systems and select the appropriate appurtenances in the sewerage system	Understanding
C411.2	Acquire the knowledge of pumping station and Select suitable plumbing systems in buildings	Applying
C411.3	Examine the characteristics of sewage and design the suitable treatment methods of sewage	Remembering
C411.4	Classify aerobic & anaerobic treatment process through attached growth process & suspended growth process	Understanding
C411.5	Design miscellaneous treatment methods for disposal of effluents through septic tank, imhoff tank etc.	Understanding
C411.6	Know the significance of sludge management and disposal of sewage for sustainable environment	Applying
CO No	**Subject: Prestressed Concrete**	**Taxonomy level**
Student should be able to		
C412.1	Concepts of prestressing in concrete structures and Comprehension of materials for prestressing	Analyzing
C412.2	The systems of prestressing & application of Pre-stressed concrete section	Analyzing
C412.3	The different losses of prestress including short and long term applications	Understanding
C412.4	Applications of prestressed concrete beams for flexural and to calculate ultimate flexural strength of beam	Analyzing
C412.5	Analysis of prestressed concrete beams for shear and torsion and to calculate ultimate flexural strength of beam	Analyzing
C412.6	Design of anchorage zones for Post tensioned Members Analysis	Analyzing
CO No	**Subject: Construction Technology Management**	**Taxonomy level**
Student should be able to		
C413.1	Describe project planning and its management such as scheduling and controlling.	Applying
C413.2	Understand the project management and techniques.	Analyzing
C413.3	Identify various construction equipments and their functioning system.	Applying
C413.4	Identify various earthwork equipments and hoist equipments in respective fieldwork.	Applying
C413.5	Demonstrate various concreting equipments and implementation mythologies.	Applying
C413.6	Describe construction methods in earthwork and piling to the respective fieldwork.	Analyzing
CO No	**Subject: Water Resources Engineering-II**	**Taxonomy level**
Student should be able to		
C414.1	Explain about irrigation and its importance with different systems	Understanding
C414.2	Learn about classification and methods of canal lining	Understanding

C4 14.3	Define about the canal structures	Applying
C4 14.4	Choose diversion head works layout. And study failures of weirs on permeable foundation	Understanding
C4 14.5	Know about reservoir planning and study of various forces acting on dams	Remembering
C4 14.6	Know the concepts for analysis of earth dams	Analyzing
CO No	**Subject: Remote Sensing & GIS**	**Taxonomy level**
Student should be able to		
C4 15.1	Understand the basic components of remote sensing and study the electromagnetic radiation and its interaction with atmosphere.	Understanding
C4 15.2	Discuss the different elements of visual interpretations and digital image processing.	Analyzing
C4 15.3	Summarise the components of GIS, types of data & its applications.	Analyzing
C4 15.4	Analyse the operations of vector & raster overlays functions.	Analyzing
C4 15.5	Discuss the case studies of GIS applications such as land use, forest, geology etc.	Remembering
C4 15.6	Discuss the case studies of GIS applications of hydrology & water resources.	Analyzing
CO No	**Subject: Ground Improvement Techniques**	**Taxonomy level**
Student should be able to		
C416.1	Possess the knowledge of various methods of ground improvement techniques.	Analyzing
C416.2	Discuss the theory and process dewatering from various point of sources.	RememberingGg
C416.3	Discuss the theory and methods of soil stabilization.	Analyzing
C416.4	Design reinforced earth embankment and check its stability.	Understanding
C416.5	State the various functions of geo-synthetics and their applications in civil engineering practice.	Evaluating
C416.6	Understand the concepts and applications of grouting.	Remembering

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IV Year II Semester

CO No	Subject: Estimation Specifications & Costing	Taxonomy level
Student should be able to		
C421.1	Understudies comprehend about various units utilized as a part of estimation	Analyzing
C421.2	Understudies separate about cost of the different material to plan delicate sheet	Evaluating
C421.3	Comprehend about powerful usage of time in development of structures	Evaluating
C421.4	Segregate about standard determinations used in auxiliary arranging.	Applying
C421.5	Comprehend about contract and tender documents	Analyzing
C421.6	Contrast the diverse strategies in estimation with ascertain Quantity of materials	Understanding
CO No	**Subject: Ground Water Development & Management**	**Taxonomy level**
Student should be able to		
C422.1	Understand aquifer properties and its dynamics	Understanding
C422.2	Analyze the concept of Well design and its applications	Analyzing
C422.3	Acquire information of well construction and its maintenance	Understanding
C422.4	Recognize the importance of artificial recharge of groundwater and the concept of seawater intrusion.	Analyzing
C422.5	Interpret the Geophysical data for the determination of Groundwater potential in the aquifers	Creating
C422.6	Predict the groundwater flow and apply appropriate measures for groundwater management	Creating
CO No	**Subject: Water Shed Management**	**Taxonomy level**
Student should be able to		
C423.1	State the various objectives of watershed development.	Understanding
C423.2	Summarize various Characteristics of Watersheds.	Analyzing
C423.3	Describe and differentiate the different types of erosion and causes of erosion.	Analyzing
C423.4	Apply the different techniques of rain water harvesting.	Analyzing
C423.5	Classify the various Land use and Land capabilities.	Understanding
C423.6	Interpret the various applications and comparison of watershed models.	Creating
CO No	**Subject: Repair & Rehabilitation of Structures**	**Taxonomy level**
Student should be able to		
C424.1	Investigate about the deterioration of concrete structures	Applying
C424.2	Demonstrate the non-destructive testing method for concrete	Creating
C424.3	Examine about failure of buildings , causes of failures and faulty design	Evaluating
C424.4	Describe the materials for repair and rehabilitation	Understanding
C424.5	Acquire the knowledge about repairing techniques	Understanding
C424.6	Discuss about the investigation of structures	Creating
Project & Seminar		Taxonomy

		level
Student should be able to		
C425.1	Work in a team to select a topic for project work.	Creating
C425.2	Review and evaluate the available literature.	Creating
C425.3	Identify the study area to which solution be employed to the problem.	Creating
C425.4	Formulate the Methodology for the project topic	Creating
C425.5	Apply the principles, tools and techniques.	Creating
C425.6	Summarize the conclusions and recommendations of project topic.	Creating

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