COURSE OUTCOMES - REGULATION 2017

I SEM

COURSE NAME: HS8151- Communicative English

COURSE CODE: 101

C101.1 Understand the basics of LSRW skills and will able to participate effectively in conversations, to exchange personal information and to express opinions in English.
C101.2 Comprehend reading and listening tasks and also to describe a simple process with a right choice of vocabulary.
C101.3 Articulate ideas coherently and write on general and creative topics using grammatically correct sentences.
C101 .4 Read, comprehend and interpret articles of a general kind in magazines and newspapers and also write informal letters and e-mails in English employing grammatically correct sentences.
C101.5 Speak clearly, confidently and comprehensibly using communicative strategies and write paragraphs and short essays cohesively and coherently.

COURSE NAME: MA8151- ENGINEERING MATHEMATICS I

COURSE CODE: C102

C102.1 Apply various techniques in solving differential equations with constant and variable coefficients.

C102.2 Gain knowledge on limits, continuity and rules of differentiation and apply them to

differentiate various functions and solve maxima and minima problems.

C102.3 Understand the concepts of partial differentiation, total derivatives and Jacobian.

C102 .4 Evaluate integrals using both Riemann sums and fundamental theorem of calculus and determine the convergence and divergence of improper integrals.

C102.5 Apply various techniques of integration to compute multiple integrals and find the area and volume using double.

COURSE NAME: PH8151- ENGINEERING PHYSICS

COURSE CODE: C103

C103.1 Understand the basics of properties of matter and its applications.

C103.2 Acquire knowledge on the concepts of waves and optical devices and their applications

in fibre optics.

C103.3 Evaluate the concepts of thermal properties of materials and their applications in expansion joints and heat exchangers.

C103 .4 Get knowledge on advanced physics concepts of quantum theory and its applications in tunneling microscopes.

C103.5 Understand the basics of crystals, their structures and different crystal growth techniques.

COURSE NAME: CY8151-ENGINEERING CHEMISTRY

COURSE CODE: C104

C104.1 Identify the origin of water resources and develop innovative methods to produce soft water for industrial use and potable water at cheaper cost.

C104.2 Explore the fundamental concepts in surface chemistry and their application in the field of catalysis.

C104.3 Gain the knowledge about phase diagrams and their applications heterogeneous equilibrium. Emphasis on heat treatment of alloys and applications

C104.4 Understand the chemistry of fuels and combustion and its application in various levels.

C104.5 Acquire the basics of non-conventional sources of energy and understand the principles and the reaction mechanism of batteries and fuel cells.

COURSE NAME: GE8151-Problem Solving and Python Programming

COURSE CODE: C105

C105.1 Develop algorithmic solutions to simple computational problems

C105.2 Structure simple Python programs for solving problems.

C105.3 Decompose a Python program into functions.

C105.4 Represent compound data using Python lists, tuples, dictionaries.

C105.5 Read and write data from/to files in Python Programs.

COURSE NAME: GE8152- Engineering Graphics

COURSE CODE: C106

C106.1 Communicate thoughts and ideas graphically in a neat fashion and ability to perform free hand sketching of basic geometrical constructions, curves used in engineering practices, multiple views of objects.

C106.2 Understand the concepts of orthographic projection from lines and plane surfaces

C106.3 Acquire the knowledge of Orthographic projection in three dimensions from solids of basic shapes using change of position and change of reference line method

C106.4 Understand the interior shapes of machine elements and structures through sections of solids and development of lateral surfaces.

C106.5 Understand the three dimensional view of an object using isometric and perspective projections

COURSE NAME: GE8161- PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY

COURSE CODE: C107

C107.1 Write, test, and debug simple Python programs.

C107.2 Implement Python programs with conditionals and loops

C107.3 Develop Python programs step-wise by defining functions and calling them

C107.4 Use Python lists, tuples, dictionaries for representing compound data..

C107.5 Read and write data from/to files in Python.

COURSE NAME: BS8161- PHYSICS AND CHEMISTRY LABORATORY

COURSE CODE: C108

C108.1 Apply the principles of Laser for engineering applications.

C108.2 Understand the basic knowledge of elasticity.

C108.3 Know the practical applications of thermal physics.

C108 .4 Acquire practical skills in the determination of water quality parameters through

volumetric method

C108.5 Understand the practical knowledge on pH and conductometric titrations.

II SEM

COURSE NAME: HS8251- Technical English

COURSE CODE: C109

C109.1 Read, identify the transition in texts and comprehend scientific and technical contexts in an enhanced way.

C109.2 Read and interpret data from graphical representations and charts in an effective way.

C109.3 Write reports effectively using appropriate vocabulary and accurate spelling and grammar.

C109 .4 Draft job application letters with Resume and e-mails in a convincing manner.

C109.5 Describe processes, participate in formal and informal conversations, Group Discussions and make technical presentations effectively

COURSE NAME: MA8251-Engineering Mathematics - II

COURSE CODE: : C110

C110.1 Evaluate Eigen values and Eigen vectors and apply them in diagonalization of

Matrices.

C110.2 Acquire knowledge in the fundamentals and basic concepts in vector calculus.

C110.3 Apply the concept of analyticity in complex functions and evaluate complex derivatives.

C110.4 Recognize the nature of singularities, evaluate residues and contour integrals.

C110.5 Understand the usage of Laplace transforms in mathematics and apply in relevant Situations.

COURSE NAME: PH8253- Physics for Civil Engineering

COURSE CODE: C111

C111.1 Gain knowledge on classical and quantum electron theories and energy band

structures.

C111.2 Acquire knowledge basics of semiconductor physics and its applications in various

devices.

C111.3 Get knowledge on magnetic and dielectric properties of materials.

C111.4 Have the necessary understanding on the functioning of optical material for optoelectronics.

C111.5 Understand the basics of quantum structures and their applications in carbon electronics.

COURSE NAME: GE8291-Environmental Science and Engineering

COURSE CODE: C114

C114.1 Understand the basics of Structure and functions of an ecosystem, the values of biodiversity and conservation of biodiversity.

C114.2 Understand the causes, effects and control measures of different pollution and disasters.

C114.3 Remember the importance of natural resources and to know the role of an individual in

conservation of natural resources and their case studies.

C114 .4 Gain knowledge about the concept of Sustainable development, Environmental Laws

and role of Government and Non- Governmental Organizations (NGO) in Environmental Protection.

C114.5 Learn the importance of family welfare programs, population explosion and Value education.

COURSE NAME: GE8261- Engineering Practices Laboratory

COURSE CODE: C115

C115.1 Able to measure electrical parameters such as voltage, current, resistance and power

C115.2 Able to measure the electrical energy by single phase and three phase energy meters.

C115.3 Able to prepare carpentry components and pipe connections including plumbing works.

C115.4 Able to prepare different types of welding joints, basic machining operations in lathe

and drilling, sheet metal works.

C115.5 Elaborate on the components, gates, soldering practices.

II YEAR

MA 8353 - TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS

C201.1	Apply transform methods to solve engineering problems
C201.2	Perform the mathematical solutions in engineering problems.
C201.3	Formulate, analyze and solve a multi-level problem in mechanics.
C201.4	Apply the concepts of Z-Transform in Digital Systems.
C201.5	Demonstrate the basic concepts in Fourier series, properties, parseval's identity.

CE8301- STRENGTH OF MATERIALS - I

C202.1	Understands the fundamental concepts of stress and strain and its types for bars of different materials and beams and stresses developed in thin cylinders and spherical shells
C202.2	Gets to know about types of beams, supports and loading conditions thereby learns to draw shear force and bending moment diagrams and works on civil engineering solutions.
C202.3	Gets the ability to find the deflection and slope in the beam by different methods and learns the safety and integrity aspects.
C202.4	Attains sufficient knowledge in designing shafts to transmit required power and also springs for its maximum energy storage capacities, which in turn can be applied in real life applications, like turbines, generators and other multidisciplinary fields.
C202.5	Analyse a complex two dimensional state of stress and plane truss

CE 8302 – FLUID MECHANICS

C203.1	Describe the fundamental properties and fluid statics
C203.2	Get a basic knowledge of fluids kinematics and dynamics
C203.3	Identify and apply Bernoulli's and momentum equations to solve pipe flow problems.
C203.4	Develop understanding of boundary layer on a flat plate and calculating lift and drag on moving plates and use research knowledge in different applications.
C203.5	Use dimensional analysis and apply similitude principle in design and interpretation of scale model experiments

CE8351 - SURVEYING

C204.1	Knowledge on the principles, methods and equipments used for chain surveying to solve the real world civil engineering problems.
C204.2	Adequate knowledge on the methods and applications of compass and plane table surveying to generate surveying data and also to analyze and interpret the results.
C204.3	Understanding in levelling and perform various levelling operations to enable the works to be designed and in setting out of engineering works for different types of civil engineering structures.
C204.4	Apply the concepts of leveling in Contouring, area and volume calculations.
C204.5	Understanding the concepts and methods of Theodolite and its applications

CE 8391 – CONSTRUCTION MATERIALS

C205.1	Understand the environmental systems, and the solutions to both man-made and natural materials.
C205.2	Understand the interactions between physical, chemical properties, of building materials
C205.3	Analyze and assess environmental systems and problems and to propose sustainable solutions to environmental problems
C205.4	Understand what constitutes the environment
C205.5	Know the precious resources in the environment

CE8392: ENGINEERING GEOLOGY

C206.1	Understand the importance of geological knowledge such as earth, earthquakes and the action of various geological agencies.
C206.2	Gain the elementary knowledge on physical properties of minerals and their significance
C206.3	Acquire knowledge about geological formations, classification and morphology of rocks.
C206.4	Gain the basic knowledge of structural geology and geophysical methods for civil Engg investigations
C206.5	Know the importance of study of geology for civil engineers with regard to founding structures like dams, bridges, buildings, etc using modern techniques

CE8311 – CONSTRUCTION MATERIALS LABORATORY

C207.1	To facilitate the understanding of the behavior of construction materials.
C207.2	The students will have the required knowledge in the area of testing of construction materials and components of construction elements experimentally
C207.3	The students will be capable to assess the quality of materials
C207.4	Compare standard values and deviations

CE8361 – SURVEYING LABORATORY

C208.1	Handle and calibrate survey instruments like chain, compass, plane table and dumpy level and their accessories for measurements of high precision
C208.2	Understand levelling and perform various levelling operations to enable the works to be designed and in setting out of engineering works.
C208.3	Carry out plane table survey and compass survey
C208.4	Develop contour map

HS 8381 - INTERPERSONAL SKILLS/LISTENING AND SPEAKING

C209.1	Equip students with the English language skills required for the successful undertaking of academic studies with primary emphasis on academic speaking and listening skills
C209.2	Provide guidance and practice in basic general and classroom conversation and to engage in specific academic speaking activities
C209.3	improve general and academic listening skills
C209.4	Make effective presentations.

MA 8491- **Numerical Methods**

C210.1	Aware of the use of numerical methods in modern scientific computing.
C210.2	Apply numerical methods to obtain approximate solutions to mathematical problems.
C210.3	Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations
C210.4	Analyse and evaluate the accuracy of common numerical methods
C210.5	Calculate and interpret the errors in numerical methods.

CE8401 –CONSTRUCTION TECHNIQUES AND PRACTICES

C211.1	know the different construction techniques and structural systems
C211.2	Understand various techniques and practices on masonry construction, flooring, and roofing
C211.3	Plan the requirements for substructure construction
C211.4	Know the methods and techniques involved in the construction of various types of super structures
C211.5	Select, maintain and operate hand and power tools and equipment used in the building construction sites

CE8402- STRENGTH OF MATERIALS II

.

C212.1	Able to apply and use energy methods to find force, stress and displacement in simple structures for appropriate consideration in aspects of safety purpose
C212.2	Analyse indeterminate beams and find slope and deflection
C212.3	Estimate the load carrying capacity of columns and thick cylinders
C212.4	Understand the concept of theories of failure and principal stresses in 3D
C212.5	Analyse the forces in curved and unsymmetrical structures

CE 8403 - APPLIED HYDRAULIC ENGINEERING

C213.1	Apply basics fluid mechanics principle in the analysis of pipe flow and open channel flow
C213.2	Solve problems in uniform, gradually varied flow in steady state condition
C213.3	Explain rapidly varied flows and Understand the profile determination by different methods
C213.4	Classify different type of turbines and Make out the Performance of turbines
C213.5	Understand key issues and design principles involved in pumps

CE 8404 –CONCRETE TECHNOLOGY

C214.1	The various requirements of cement, aggregates and water for making concrete
C214.2	The effect of admixtures on properties of concrete
C214.3	The concept and procedure of mix design as per IS method
C214.4	The properties of concrete at fresh and hardened state
C214.5	The importance and application of special concretes.

CE8491- **SOIL MECHANICS**

C215.1	Identify the different types of soil based on the knowledge of fundamental mathematical science.
C215.2	Relate the significance of basic physical and mechanical properties of soil and also the experimental methods to measure permeability and effective stress.
C215.3	Apply the principle of effective stress and then calculate the stresses that influence soil behavior and Interpret both the applications and limits of engineering methods commonly used to solve stress distribution and settlement problems in soil mechanics

C215.4	Apply engineering science principles using shear strength and compressibility parameters to analyse the response of soil under external loading.
C215.5	Recognize more advanced techniques that are available for unusual problems in analyzing slopes.

CE8481- STRENGTH OF MATERIALS LABORATORY

C216.1	Acquire knowledge in the area of testing of materials like mild steel, aluminium, copper, brass, wood and components of structural elements experimentally and Learn to operate UTM (universal testing machine) which is used in testing the tensile, compressive, shear strength, deflection and torsion of the material.
C216.2	Acquires knowledge in finding stiffness of helical and carriage springs and there by learning its practical applications both in machineries and civil engineering structures.
C216.3	Learns to conduct hardness of different metals by Rockwell and Brinell Hardness Tests and there by learning the properties of materials and its behavior when it is loaded and alsoLearns to conduct impact test on metal specimens and learning its real life applications and to work on safety aspects.
C216.4	Attains knowledge in finding the properties of cement and there by learning its application in global aspect.

CE8461- HYDRAULIC ENGINEERING LABORATORY

C217.1	Gain knowledge in conducting experiments to determine discharge coefficients in tanks and open channels
C217.2	Gain knowledge in conducting experiments to determine discharge coefficients in pipes
C217.3	Acquire knowledge to find the impact of jet on plates and major and minor losses in pipes
C217.4	Understand the functioning principle of turbines and pumps

HS 8461 – ADVANCED READING AND WRITING

C218.1	Equip themselves with effective speaking and listening skills
C218.2	Develop their soft skills and inter personal skills which will help them excel in their job
C218.3	Enhance the performance at placement interviews group discussion and other recruitment
C218.4	Prepare themselves to adapt with ease to the industry environment

III YEAR

CE8501- **DESIGN OF REINFORCED CEMENT CONCRETE ELEMENTS**

C301.1	To understand the concept of Elastic method, ultimate load method and limit state method and to analyse and design rectangular beams by working stress method & Limit state method.
C301.2	To analyse and design Flanged beams & to design RC members for bond and Anchorage, combined bending shear and torsion.
C301.3	To analyse and design one way slab, two way slab and continuous slabs
C301.4	To analyse and design of dog-legged Staircase.
C301.5	To design short columns for axial load, uniaxial and biaxial bending & to design slender column for uniaxial and biaxial bending.
C301.6	To design isolated footing, wall footing and combined rectangular footings

CE8502 - **STRUCTURAL ANALYSIS-I**

C302.1	Determination of Static and Kinematic Indeterminacies of structural elements
C302.2	Apply energy principles for the analysis of determinate and indeterminate structures
C302.3	Apply Force method of Structural Analysis
C302.4	Apply Displacement method of Structural Analysis
C302.5	Understand and Analyse symmetric and unsymmetric loading conditions
C302.6	Analysis of structural element with support settlement condition

EN 8491 –WATER SUPPLY ENGINEERING

C303.1	Describe the concept of public water supply system, conveying water from source, unit processes and unit operations in water treatment.
C303.2	Understand types of water sources, water demand, intake structures, hydraulic flow in pipes and types conduits.
C303.3	Illustrate characterization water, Pump and pipe appurtenance in conveyance system,

	construction and maintenance aspects in water treatment.
C303.4	Elucidate, conventional and advanced treatment process involved in water treatment.
C303.5	Decide and select an appropriate process of treatment for the removal specific pollutant.
C303.6	Design and analyze the water distribution network and water supply in buildings.

CE8591- FOUNDATION ENGINEERING

C304.1	Plan and investigate a site investigation program including sub-surface exploration to evaluate soil structure behavior and to obtain the necessary design parameters.
C304.2	Understand and recognize the behavior of soils in slopes and estimate the lateral loads on retaining structures.
C304.3	Perform geotechnical engineering design functions for shallow foundations subjected to vertical and lateral loads based on codal provisions and Apply soil - structure interaction concepts to predict the load settlement curve.
C304.4	Determine allowable bearing pressure and load carrying capabilities of different foundation systems like footings and rafts.
C304.5	Evaluate pile capacity in the field using load tests, pile driving equipments and wave equation analysis.

GI 8014 - GEOGRAPHIC INFORMATION SYSTEM

C307.1	Acquire knowledge about the fundamental concepts of GIS
C307.2	Examine the types of data models, their structure, characteristics and representation
C307.3	Understand different data input methods, processes and topology
C307.4	Gather knowledge on the basic aspects of data quality
C307.5	Deduce the importance of various GIS standards and their implementation
	Understand data management functions and data output

ORO551- RENEWABLE ENERGY SOURCES

C316.1	Understanding the physics of solar radiation.
C316.2	Ability to classify the solar energy collectors and methodologies of storing solar energy.

C316.3	.Knowledge in applying solar energy in a useful way
C316.4	. Knowledge in wind energy and biomass with its economic aspects
C316.5	Knowledge in capturing and applying other forms of energy sources like wind, biogas and geothermal energies.

CE8511 - SOIL MECHANICS LABORATORY

C320.1	Determine the index properties
C320.2	Determine the insitu density and compaction characterisitics
C320.3	Determine permeability by constant and falling head methods
C320.4	Determine shear strength by direct shear, UCC, vane shear and CBR Test

CE8512- Water and Waste Water Analysis Laboratory

C321.1	Understand the sampling and preservation methods and significance of water and waste water and process of coagulation and precipitation
C321.2	conduct laboratory experiments for the determination of ammonia nitrogen, total solids, nitrates, phosphates, calcium, potassium and sodium
C321.3	Demonstrate the determination of heavy metals.
C321.4	conduct laboratory experiments and critically analyze and interpret data for the determination of BOD,COD and bacteriological analysis.

CE8513 - SURVEY CAMP

C322.1	Enable students a complete basic surveying exposure on a considerably difficult hilly terrain.
C322.2	Take up tasks such as setting up of traverse stations, base-line measurements; fly leveling, detailing, and contouring.
C322.3	Develop understanding of maintaining survey field-books and drawing topographical sheets/maps.
C322.4	Develop capacity to work in group and Conduct various types of survey in the field as per the requirements using advanced instruments

CE8601 - DESIGN OF STEEL STRUCTURES

C323.1	Understand the concepts of various design philosophies
C323.2	Design common bolted and welded connections for steel structures
C323.3	Design tension members and understand the effect of shear lag.
C323.4	Explain the design concept of axially loaded columns and column base connections.
C323.5	Evaluate specific problems related to the design of laterally restrained and unrestrained Steel beams
C323.6	Design the industrial structures like purlin,roof trusses and girders.

CE8602 - STRUCTURAL ANALYSIS II

C324.1	Draw influence lines for statically determinate structures and calculate critical stress resultants.
C324.2	Understand Muller Breslau principle and draw the influence lines for statically indeterminate beams – Propped Cantilever Beam.
C324.3	Understand Muller Breslau principle and draw the influence lines for statically
C324.4	Analyse of three hinged, two hinged and fixed arches.
C324.5	Analyse the suspension bridges with stiffening girders
C324.6	Understand the concept of Plastic analysis and the method of analyzing beams and rigid frames

CE8603 –IRRIGATION ENGINEERING

C325.1	Have knowledge on relationship between crop parameters, water, soil and atmospheric factors
C325.2	Understand the methods and management of irrigation and can plan a proper irrigation system
C325.3	Gain knowledge on types of Impounding structures and can analyze various dams
C325.4	Design irrigation canal structures, diversion head works and understand alignments of

	canals
C325.5	Acquire knowledge on water management on optimization of water use.
C325.6	Efficiently and economically manage the irrigation systems using modern techniques

CE8604 - HIGHWAY ENGINEERING

C326.1	Acquire knowledge on development and planning of highways & related infrastructures.
C326.2	Understand the concepts and methods of highway alignment and engineering surveys.
C326.3	Apply the knowledge of science and engineering fundamentals in designing the geometrics for an efficient highway network.
C326.4	Design various types of pavements to meet specified needs of safety, efficiency and long time sustainability by adopting various design standards.
C326.5	Assess appropriate materials and methods for construction, evaluation and maintenance of highways.
C326.6	Evaluate the bidding processes and analyze the economic and financial aspects of highway projects.

EN 8592- WASTE WATER ENGINEERING

C327.1	Understand the sources of waste water generation, effects and estimation of storm runoff with the knowledge of effluent standards
C327.2	Design the sanitary , storm sewers, and plumbing system for buildings
C327.3	Understand the unit operation and process of primary treatment of sewage
C327.4	Design secondary treatment units of sewage.
C327.5	Find the proper disposal methods depending upon the sewage characteristics
327.6	

CE8005 - AIR POLLUTION AND CONTROL ENGINEERING

C332.1	Identify the major sources, effects and key chemical transformations of air pollution. (K1)
C332.2	Discuss air quality monitoring and pollution regulation on its scientific basis (K2)

C332.3	Illustrate the meteorological influence on air and plume behavior for different atmospheric stability conditions (K3)
C332.4	Categorize appropriate sampling techniques for particulate and gases pollutants. (K4)
C332.5	Design air pollution control systems and evaluate their efficiency (K5)
C332.6	Explain the basic concepts in Indoor air quality management. (K2)

CE8091- Hydrology and Water Resources Engineering

C333.1	Discuss the key drivers on water resources, hydrological processes and their integrated behavior in catchments.
C333.2	Determine Run off and flow measurements to solve surface and groundwater problems .
C333.3	Evaluate and manage Flood/Drought and artificial recharge.
C333.4	Analyse rainfall data and design water storage reservoirs.
C333.5	Apply different methods of ground water management.
C333.6	Review of hydrological aspects of water resources.

CE8611 - HIGHWAY ENGINEERING LAB

C334.1	know the characteristics, properties and conduct experiments on fresh concrete
C334.2	know the characteristics, properties and conduct experiments on hardened concrete
C334.3	know the characteristics, properties and conduct experiments on bitumen and bitumen mixes
C334.4	know the characteristics, properties and conduct experiments on aggregates

CE8612 - IRRIGATION AND ENVIRONMENTAL ENGINEERING DRAWING

C335.1	Design and draw the various components for water supply treatment process and wastewater treatment and disposal.
C335.2	Design and draw the various components impounding structures like surplus weir, tank tower head.
C335.3	Design and draw the various components of canal transmission structures like aqueducts and canal drops.

C335.4	Design and draw the various components of canal regulation structures like canal head works.

IV YEAR

CE8701 - ESTIMATION, COSTING AND VALUATION ENGINEERING

C401.1	Understand the concept of estimating the material quantities; prepare a bill of quantities, Prepare quantity estimates for Buildings, roads, septic tank, retaining walls and culverts as per specifications. (K2)
C401.2	Apply concepts of estimation in evaluating construction cost based on the specifications. (K3)
C401.3	Formulate detailed specifications and work out Rate Analysis for all works related to civil engineering projects. (K6)
C401.4	Prepare and evaluate tender documents and contract documents. (K5)
C401.5	Analyzing rate for various civil works and to be expertise in acquisition of tender and report preparation. (K4)
C401.6	Calculate the value of the building using principles of valuation (K3)

CE8702- RAILWAYS, AIRPORTS, DOCKS AND HARBOUR ENGINEERING

C402.1	Discuss the methods of route alignment and elements in Railway Planning and Constructions.
C402.2	Illustrate the Construction techniques and Maintenance of Track laying and Railway stations
C402.3	Analyze and design the elements for orientation of runways and passenger facility systems
C402.4	Demonstrate site selection of an Airport, airport planning and layout of an international airport
C402.5	Outline the various features in Harbours and Ports, their construction.
C402.6	Categorize the coastal protection works and coastal Regulations to be adopted

CE8703- STRUCTURAL DESIGN AND DRAWING

C403.1	Design and draw reinforced concrete Cantilever and Counterfort Retaining Walls.
C403.2	Design and draw flat slab as per code provisions
C403.3	Design and draw reinforced concrete and steel bridges
C403.4	Design and draw reinforced concrete and steel water tanks
C403.5	Applying steel structural connection detail in steel trusses
	Design and detailing of gantry girders

EN8591 – MUNICIPAL SOLID WASTE MANAGEMENT

C411.1	Understanding of problems of municipal waste, biomedical waste, hazardous waste, e-waste, industrial waste etc.
C411.2	Knowledge of legal, institutional and financial aspects of management of solid wastes.
C411.3	Become aware of Environment and health impacts of solid waste mismanagement
C411.4	Identifying recycling and reuse options (composting, source separation, and re-use of shredded tires, recycled glass, fly ash, etc.) the ablity to design all units of municipal solid waste management.
C411.5	Ability to plan waste minimization and design storage, collection, transport, processing and disposal of municipal solid waste.
C411.6	Knowledge on the regulatory requirements regarding municipal solid waste management.an understanding of the nature and characteristics of municipal solid wastes.

OEN751- GREEN BUILDING DESIGN

C416.1	Demonstrate their knowledge about the different types of energy use.
C416.2	Explain the different types of construction methods, its impact on environment with possible remedial measures.
C416.3	Elaborate on the thermal comfort in buildings and select suitable materials and methods for attaining thermal comfort.
C416.4	Explain the concepts of passive solar heating and cooling of buildings with case studies.

C416.5	Discuss about the sustainable development of built environment
C416.6	Understand green engineering concept & develop sustainable solutions for Engineering problems.

CE8711 CREATIVE AND INNOVATIVE PROJECT

C423.1	Expose students to a detailed design problem related any one of the following components viz. design of structures, geotechnical investigations, water supply distribution system, irrigation engineering and highway design.
C4232	Master the art of working in group, and develop understanding of technical dissertation presentation and writing.
C423.3	Prepare the plan of a Civil engineering structure.
C423.4	Analyze and design the structure and Prepare the detailed drawings for structural elements

CE8712 INDUSTRIALTRAINING

C424.1	The intricacies of implementation textbook knowledge into practice
C424.2	The concepts of developments and implementation of new techniques

SEMESTER - VIII

CE8091 –HYDROLOGY AND WATER RESOURCE ENGINEERING

C431.1	Discuss the key drivers on water resources, hydrological processes and their integrated behavior in catchments.
C431.2	Determine Run off and flow measurements to solve surface and groundwater problems .
C431.3	Evaluate and manage Flood/Drought and artificial recharge.
C431.4	Analyse rainfall data and design water storage reservoirs.
C431.5	Apply different methods of ground water management.
C431.6	Review of hydrological aspects of water resources.

CE 8020 MAINTENANCE, REPAIR AND REHABILITATION OF STRUCTURES

C434.1	Able to gain knowledge on the importance of maintenance and assessment methods of distressed structures.
C434.2	Able to attain understand the strength and durability properties of concrete, their effects due to climate and temperature
C434.3	Able to understand the properties and uses of different types of concrete.
C434.4	Able to attain knowledge on techniques for reparing of concrete structures.
C434.5	Able to attain knowledge on corrosion and methods to prevent it.

E8811 PROJECT WORK

C439.1	To develop the ability to solve a specific problem right from its identification and till the successful solution of the same
C439.2	position to take up any challenging practical problems and find solution by formulating proper methodology
C439.3	Master the art of working in group, and develop understanding of technical dissertation presentation and writing.
C439.4	Train the students in preparing project reports and to face reviews and viva voce examination