**2017 Regulation Course outcome**

**Branch:B.E. Civil Engineering**

**Course Code: C101 Course Name:HS6151 COMMUNICATIVE ENGLISH**

| | |
|---|---|
| C101.1 | Read articles of a general kind in magazines and newspapers. |
| C101.2 | Participate effectively in informal conversations; introduce themselves and their friends and express opini |
| C101.3 | Comprehend conversations and short talks delivered in English |
| C101.4 | Write short essays of a general kind and personal letters and emails in English. |
| C101.5 | Speak clearly confidently ,comprehensibly |

**Course Code: C102 Course Name:MA8151 ENGINEERING MATHEMATICS I**

| | |
|---|---|
| C102.1 | Use both the limit definition and rules of differentiation to differentiate functions. |
| C102.2 | Apply differentiation to solve maxima and minima problems |
| C102.3 | Evaluate integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus. |
| C102.4 | Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition t |
| C102.5 | Evaluate integrals using techniques of integration, such as substitution, partial fractions and integration b |

**Course Code: C103 Course Name:PH8151 ENGINEERING PHYSICS I**

| | |
|---|---|
| C103.1 | the students will gain knowledge on the basics of properties of matter and its applications |
| C103.2 | the students will acquire knowledge on the concepts of waves and optical devices and their applications in fibre optics, |
| C103.3 | the students will have adequate knowledge on the concepts of thermal properties of materials and their applications in expansion joints and heat exchangers, |
| C103.4 | the students will get knowledge on advanced physics concepts of quantum theory and its applications in tu |
| C103.5 | the students will understand the basics of crystals, their structures and different crystal growth techniques |

**Course Code: C104 Course Name:CY8151 ENGINEERING CHEMISTRY**

| | |
|---|---|
| C104.1 | To make the students conversant with boiler feed water requirements, related problems and water treatm |
| C104.2 | To develop an understanding of the basic concepts of phase rule and its applications to single and two com |
| C104.3 | Preparation, properties and applications of engineering materials |
| C104.4 | Types of fuels, calorific value calculations, manufacture of solid, liquid and gaseous fuels. |
| C104.5 | Principles and generation of energy in batteries, nuclear reactors, solar cells, wind mills and fuel cells |

**Course Code: C105 Course Name:GE8151 PROBLEM SOLVING AND PYTHON PROGRAMMING**

| | |
|---|---|
| C105.1 | Develop algorithmic solutions to simple computational problem |
| C105.2 | Read, write, execute by hand simple Python programs. |
| C105.3 | Structure simple Python programs for solving problems. |
| C105.4 | Decompose a Python program into functions. |
| C105.5 | Represent compound data using Python lists, tuples, dictionaries. |

**Course Code: C106 Course Name:GE8152 ENGINEERING GRAPHICS**

| | |
|---|---|
| C106.1 | familiarize with the fundamentals and standards of Engineering graphics |
| C106.2 | perform freehand sketching of basic geometrical constructions and multiple views of objects |
| C106.3 | project orthographic projections of lines and plane surfaces. |
| C106.4 | draw projections and solids and development of surfaces |
| C106.5 | visualize and to project isometric and perspective sections of simple solids. |

**Course Code: C107 Course Name:GE8161 PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY**

| | |
|---|---|
| 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 Code: C108 Course Name:BS8161 PHYSICS AND CHEMISTRY LABORATORY**

| | |
|---|---|
| C108.1 | Apply principles of elasticity, optics and thermal properties for engineering applications |
| C108.2 | The students will be outfitted with hands-on knowledge in the quantitative chemical analysis of water qua |

**Course Code: C109 Course Name:HS8251 TECHNICAL ENGLISH**

| | |
|---|---|
| C109.1 | Read technical texts and write area- specific texts effortlessly. |
| C109.2 | Listen and comprehend lectures and talks in their area of specialisation successfully |
| C109.3 | Speak appropriately and effectively in varied formal and informal contexts. |
| C109.4 | Write reports and winning job applications |
| C109.5 | Initiate a discussion, negotiate, argue using appropriate communicative strategies. |

**Course Code: C110 Course Name:MA8251ENGINEERING MATHEMATICS- II**

| | |
|---|---|
| C110.1 | Eigenvalues and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices |
| C110.2 | Gradient, divergence and curl of a vector point function and related identities |
| C110.3 | Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verif |
| C110.4 | Analytic functions, conformal mapping and complex integration |
| C110.5 | Laplace transform and inverse transform of simple functions, properties, various related theorems and ap |

**Course Code: C111 Course Name:PH8201 PHYSICS FOR CIVIL ENGINEERING**

| | |
|---|---|
| C111.1 | the students will have knowledge on the thermal performance of buildings, |
| C111.2 | the students will acquire knowledge on the acoustic properties of buildings, |
| C111.3 | the students will get knowledge on various lighting designs for buildings, |
| C111.4 | the students will gain knowledge on the properties and performance of engineering materials, and |
| C111.5 | the students will understand the hazards of buildings |

**Course Code: C112 Course Name:BE8251 BASIC ELECTRICAL & ELECRONICS ENGINEERING**

| | |
|---|---|
| C112.1 | ability to identify the electrical components and explain the characteristics of electrical machines. |
| C112.2 | ability to identify electronics components and understand the characteristics |
| C112.3 | To explain the fundamentals of semiconductor and applications. |
| C112.4 | To explain the principles of digital electronics |
| C112.5 | To impart knowledge of communication. |

**Course Code: C113 Course Name:GE8291 ENVIRONMENTAL SCIENCE AND ENGINEERING**

| | |
|---|---|
| C113.1 | Environmental Pollution or problems cannot be solved by mere laws. Public participation is an important aspect which serves the environmental Protection. One will obtain knowledge on the following after completing the course. |
| C113.2 | Public awareness of environmental is at infant stage |
| C113.3 | Ignorance and incomplete knowledge has lead to misconceptions |
| C113.4 | Development and improvement in std. of living has lead to serious environmental disasters |
| C113.5 | To study the integrated themes and biodiversity, natural resources, pollution control and waste manageme |

**Course Code: C114 Course Name:GE8292 ENGINEERING MECHANICS**

| | |
|---|---|
| C114.1 | illustrate the vectorial and scalar representation of forces and moments |
| C114.2 | analyse the rigid body in equilibrium |
| C114.3 | evaluate the properties of surfaces and solids |
| C114.4 | calculate dynamic forces exerted in rigid body |
| C114.5 | determine the friction and the effects by the laws of friction |

**Course Code: C115 Course Name:GE8261 ENGINEERING PRACTICES LABORATORY**

| | |
|---|---|
| C115.1 | To provide the basic practical exposure to building work,plumbing work,carpentry using power tools |
| C115.2 | To provide the basic practical exposure to welding,basic Machining,sheet metal work,machine assembly p |
| C115.3 | To provide the basic practical exposure to Electrical Engineering practice |
| C115.4 | To provide the basic practical exposure to Electronics Engineering practice |
| C115.5 | Carry out basic home electrical works and appliances |

**Course Code: C116 Course Name:CE8211 COMPUTER AIDED BUILDING DRAWING**

| | |
|---|---|
| C116.1 | Have fundamental understanding of 2D and 3D views of buildings |
| C116.2 | Understand the different views of the components of building |
| C116.3 | Familiarize with standard symbols and sign conventions suitably |
| C116.4 | Understand the structures with North light roof truss |
| C116.5 | Create plan, section and elevation of different buildings |

**Course Code: C201 Course Name: MA8353 TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS**

| | |
|---|---|
| C201.1 | Understand how to solve the given standard partial differential equations. |
| C201.2 | Solve differential equations using Fourier series analysis which plays a vital role in engineering applicatio |
| C201.3 | Appreciate the physical significance of Fourier series techniques in solving one and two dimensional heat f |
| C201.4 | Understand the mathematical principles on transforms and partial differential equations would provide th |
| C201.5 | Use the effective mathematical tools for the solutions of partial differential equations by using Z transform |

**Course Code: C202 Course Name: CE8301 STRENGTH OF MATERIALS I**

| | |
|---|---|
| C202.1 | Understand the concepts of stress and strain, principal stresses and principal planes. |
| C202.2 | Determine Shear force and bending moment in beams and understand concept of theory of simple bendin |
| C202.3 | Calculate the deflection of beams by different methods and selection of method for determining slope or d |
| C202.4 | Apply basic equation of torsion in design of circular shafts and helical springs |
| C202.5 | Analyze the pin jointed plane and space trusses |

**Course Code: C203 Course Name: CE8302 FLUID MECHANICS**

| | |
|---|---|
| C203.1 | Get a basic knowledge of fluids in static, kinematic and dynamic equilibrium. |
| C203.2 | Understand and solve the problems related to equation of motion. |
| C203.3 | Gain knowledge about dimensional and model analysis. |
| C203.4 | Learn types of flow and losses of flow in pipes. |
| C203.5 | Understand and solve the boundary layer problems. |

**Course Code: C204 Course Name: CE8351 SURVEYING**

| | |
|---|---|
| C204.1 | The use of various surveying instruments and mapping |
| C204.2 | Measuring Horizontal angle and vertical angle using different instruments |
| C204.3 | Methods of Leveling and setting Levels with different instruments |
| C204.4 | Concepts of astronomical surveying and methods to determine time, longitude, latitude and azimuth □ Co |
| C204.5 | Concept and principle of modern surveying. |

**Course Code: C205 Course Name: CE8391 CONSTRUCTION MATERIAL**

| | |
|---|---|
| C205.1 | Compare the properties of most common and advanced building materials |
| C205.2 | understand the typical and potential applications of lime, cement and aggregates |
| C205.3 | know the production of concrete and also the method of placing and making of concrete elements. |
| C205.4 | understand the applications of timbers and other materials |
| C205.5 | Understand the importance of modern material for construction. |

**Course Code: C206 Course Name: CE8392 ENGINEERING GEOLOGYAL**

| | |
|---|---|
| C206.1 | Will be able to understand the importance of geological knowledge such as earth, earthquake, volcanism and the action of various geological agencies. |
| C206.2 | Will get basics knowledge on properties of minerals |
| C206.3 | Gain knowledge about types of rocks, their distribution and uses |
| C206.4 | Will understand the methods of study on geological structure |
| C206.5 | Will understand the application of geological investigation in projects such as dams, tunnels, bridges, roads, airport and harbor |

**Course Code: C207 Course Name: CE8311 CONSTRUCTION MATERIAL LABORATOORY**

| | |
|---|---|
| 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 compon |

**Course Code: C208 Course Name: CE8361 SURVEYING LABORATOORY**

| | |
|---|---|
| C208.1 | At the end of the course the student will posses knowledge about Survey field techniques |
| C208.2 | Students completing this course would have acquired practical knowledge on handling basic survey instruments including Theodolite, Tacheometry, Total Station and GPS and have adequate knowledge to carryout Triangulation and Astronomical surveying including general field marking for various engineering projects and Location of site etc. |

**Course Code: C209 Course Name: CE8381 INTERPERSONAL SKILL/LISTENING AND SPEAKING**

| | |
|---|---|
| C209.1 | Listen and respond appropriately. |
| C209.2 | Participate in group discussions |
| C209.3 | Make effective presentations |
| C209.4 | Participate confidently and appropriately in conversations both formal and informal |

**Course Code: C210 Course Name: MA8491NUMERICAL METHODS**

| | |
|---|---|
| C210.1 | Understand the basic concepts and techniques of solving algebraic and transcendental equations. |
| C210.2 | Appreciate the numerical techniques of interpolation and error approximations in various intervals in rea |
| C210.3 | Apply the numerical techniques of differentiation and integration for engineering problems. |
| C210.4 | Understand the knowledge of various techniques and methods for solving first and second order ordinary |
| C210.5 | Solve the partial and ordinary differential equations with initial and boundary conditions by using certain |

**Course Code: C211 Course Name: CE8401CONSTRUCTION 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. |

**Course Code: C212 Course Name: CE8402 STRENGTH OF MATERIALS II**

| | |
|---|---|
| C212.1 | Determine the strain energy and compute the deflection of determinate beams, frames and trusses using energy principles. |
| C212.2 | Analyze propped cantilever, fixed beams and continuous beams using theorem of three moment equation for external loadings and support settlements. |
| C212.3 | Find the load carrying capacity of columns and stresses induced in columns and cylinders |
| C212.4 | Determine principal stresses and planes for an element in three dimensional state of stress and study various theories of failure |
| C212.5 | Determine the stresses due to Unsymmetrical bending of beams, locate the shear center, and find the stresses in curved beams |

**Course Code: C213 Course Name: CE8403 APPLIED HYDRAULIC ENGINEERING**

| | |
|---|---|
| C213.1 | Apply their knowledge of fluid mechanics in addressing problems in open channels. |
| C213.2 | Able to identify a effective section for flow in different cross sections. |
| C213.3 | To solve problems in uniform, gradually and rapidly varied flows in steady state conditions |
| C213.4 | Understand the principles, working and application of turbines. |
| C213.5 | Understand the principles, working and application of pumps |

**Course Code: C214 Course Name: CE8404 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. |

**Course Code: C215 Course Name: CE8405 SOIL MECHANICS**

| | |
|---|---|
| C215.1 | Classify the soil and assess the engineering properties, based on index properties. |
| C215.2 | Understand the stress concepts in soils |
| C215.3 | Understand and identify the settlement in soils. |
| C215.4 | Determine the shear strength of soil |
| C215.5 | Analyze both finite and infinite slopes. |

**Course Code: C216 Course Name: CE8481STRENGTH OF MATERIALS LABORATORY**

| | |
|---|---|
| C216.1 | To expose the students to the testing of different materials under the action of various forces and determin |
| C216.2 | The students will have the required knowledge in the area of testing of materials and components of struct |

**Course Code: C217 Course Name: CE8461 HYDRAULIC ENGINEERING LABORATORY**

| | |
|---|---|
| C217.1 | The students will be able to measure flow in pipes and determine frictional losses. |
| C217.2 | The students will be able to develop characteristics of pumps and turbines. |
| C217.3 | Determine the flow in pipes and open channels. |
| C217.4 | Analyze the major and minor losses in pipes. And Select an appropriate pump for a specific application. |
| C217.5 | Understand the impact of jet on vanes and to compute their efficiency.Select a suitable type of turbine for |

**Course Code: C218 Course Name: HS8461 ADVANCED READING AND WRITING**

| | |
|---|---|
| C218.1 | Write different types of essays. |
| C218.2 | Write winning job applications. |
| C218.3 | Read and evaluate texts critically |
| C218.4 | Display critical thinking in various professional contexts. |

**Course Code: C301Course Name: CE8501 DESIGN OF REINFORCED CEMENT CONCRETE ELEMENTS**

| | |
|---|---|
| C301.1 | Understand the various design methodologies for the design of RC elements. |
| C301.2 | Know the analysis and design of flanged beams by limit state method and sign of beams for shear, bond ar |
| C301.3 | design the various types of slabs and staircase by limit state method |
| C301.4 | Design columns for axial, uniaxial and biaxial eccentric loadings. |
| C301.5 | Design of footing by limit state method. |

**Course Code: C302Course Name: CE8502 STRUCTURAL ANALYSIS I**

| | |
|---|---|
| C302.1 | Analyze continuous beams, pin-jointed indeterminate plane frames and rigid plane frames by strain energ |
| C302.2 | Analyse the continuous beams and rigid frames by slope defection method |
| C302.3 | Understand the concept of moment distribution and analysis of continuous beams and rigid frames with a |
| C302.4 | Analyse the indeterminate pin jointed plane frames continuous beams and rigid frames using matrix flexil |
| C302.5 | Understand the concept of matrix stiffness method and analysis of continuous beams, pin jointed trusses a |

**Course Code: C303Course Name: EN8491 WATER SUPPLY ENGINEERING**

| | |
|---|---|
| C303.1 | an insight into the structure of drinking water supply systems, including water transport, treatment and d |
| C303.2 | The knowledge in various unit operations and processes in water treatment |
| C303.3 | an ability to design the various functional units in water treatment |
| C303.4 | an understanding of water quality criteria and standards, and their relation to public health |
| C303.5 | the ability to design and evaluate water supply project alternatives on basis of chosen criteria |

**Course Code: C304Course Name: CE8591 FOUNDATION ENGINEERING**

| | |
|---|---|
| C304.1 | Understand the site investigation, methods and sampling. |
| C304.2 | Get knowledge on bearing capacity and testing methods |
| C304.3 | Design shallow footings |
| C304.4 | Determine the load carrying capacity, settlement of pile foundation |
| C304.5 | Determine the earth pressure on retaining walls and analysis for stability. |

**Course Code: C305Course Name: GI8014 GEOGRAPHIC INFORMATION SYSTEM**

| | |
|---|---|
| C305.1 | Have basic idea about the fundamentals of GIS. |
| C305.2 | Understand the types of data models. |
| C305.3 | Get knowledge about data input and topology |
| C305.4 | Gain knowledge on data quality and standards |
| C305.5 | Understand data management functions and data output |

**Course Code: C306Course Name: OA6151 ENVIRONMENT &AGRICULTURE**

| | |
|---|---|
| C306.1 | students will understand the factors of Environment and agriculture |
| C306.2 | Students will understand the impacts of Environment |
| C306.3 | Students will understand the climatic changes and causes |
| C306.4 | Students will come to know about the diversity of agriculture and Environment |
| C306.5 | Students will come to know about the emerging issues of agriculture and Environment |

**Course Code: C307Course Name: CE8511 SOIL MECHANICS LABORATORY**

| | |
|---|---|
| C307.1 | Students know the techniques to determine index properties and engineering properties such as shear strength, compressibility and permeability by conducting appropriate tests. |
| C307.2 | Awareness of using California Bearing ratio |
| C307.3 | Knowledge on grain size distribution |
| C307.4 | Impart the knowledge of in situ density and compaction characteristics |
| C307.5 | Gain knowledge on Engineering properties |

**Course Code: C308Course Name: CE8512 WATER & WASTE WATER ANALYSIS LABORATORY**

| | |
|---|---|
| C308.1 | Quantify the pollutant concentration in water and wastewater |
| C308.2 | Suggest the type of treatment required and amount of dosage required for the treatment |
| C308.3 | Examine the conditions for the growth of micro-organisms |

**Course Code: C309Course Name: CE8513 SURVEY CAMP**

| | |
|---|---|
| C309.1 | Handle the conventional surveying equipments such as chain, tape, compass, plain table and theodolite in |
| C309.2 | Undergo traverse using various instruments and to Plot LS,CS and contour using levelling instruments |
| C309.3 | Do lay out preparation using theodolite |
| C309.4 | calculate the azimuth of a line by observation of sun |
| C309.5 | Use modern surveying instruments like total station and GPS |

**Course Code: C310Course Name: CE8601 DESIGN OF STEEL STRUCTURAL ELEMENTS**

| | |
|---|---|
| C310.1 | Understand the concepts of various design philosophies |
| C310.2 | Design common bolted and welded connections for steel structures |
| C310.3 | Design tension members and understand the effect of shear lag |
| C310.4 | Understand the design concept of axially loaded columns and column base connections |
| C310.5 | Understand specific problems related to the design of laterally restrained and unrestrained steel beams |

**Course Code: C310Course Name: CE8602 STRUCTURAL ANALYSIS II**

| | |
|---|---|
| C311.1 | Draw influence lines for statically determinate structures and calculate critical stress resultants |
| C311.2 | Understand Muller Breslau principle and draw the influence lines for statically indeterminate beams |
| C311.3 | Analyse of three hinged, two hinged and fixed arches |
| C311.4 | Analyse the suspension bridges with stiffening girders |
| C311.5 | Understand the concept of Plastic analysis and the method of analyzing beams and rigid frames |

**Course Code: C312Course Name: CE8603 IRRIGATION ENGINEERING**

| | |
|---|---|
| C312.1 | Have knowledge and skills on crop water requirements. |
| C312.2 | Understand the methods and management of irrigation. |
| C312.3 | Gain knowledge on types of Impounding structures |
| C312.4 | Understand methods of irrigation including canal irrigation |
| C312.5 | Get knowledge on water management on optimization of water use |

**Course Code: C313Course Name: CE8604 HIGHWAY ENGINEERING**

| | |
|---|---|
| C313.1 | Get knowledge on planning and aligning of highway. |
| C313.2 | Design flexible and rigid pavements. |
| C313.3 | Gain knowledge on Highway construction materials, properties, testing methods |
| C313.4 | Gain knowledge on Highway construction materials, properties, testing methods |
| C313.5 | Understand the concept of pavement management system, evaluation of distress and maintenance of pave |

**Course Code: C314Course Name: EN8592 WASTE WATER ENGINEERING**

| | |
|---|---|
| C314.1 | An ability to estimate sewage generation and design sewer system including sewage pumping stations |
| C314.2 | The required understanding on the characteristics and composition of sewage, selfpurification of streams |
| C314.3 | An ability to perform basic design of the unit operations and processes that are used in sewage treatment |
| C314.4 | Understand the standard methods for disposal of sewage. |
| C314.5 | Gain knowledge on sludge treatment and disposal. |

**Course Code: C315Course Name:CE8005 AIR POLLUTION AND CONTROL ENGINEERING**

| | |
|---|---|
| C315.1 | an understanding of the nature and characteristics of air pollutants, noise pollution and basic concepts of |
| C315.2 | ability to identify, formulate and solve air and noise pollution problems |
| C315.3 | ability to design stacks and particulate air pollution control devices to meet applicable standards |
| C315.4 | Ability to select control equipments. |
| C315.5 | Ability to ensure quality, control and preventive measures. |

**Course Code: C316Course Name:CE8611 HIGHWAY ENGINEERING LABORATORY**

| | |
|---|---|
| C316.1 | Test on Aggregates |
| C316.2 | Test on Bitumen |
| C316.3 | Test on bitumen mixes |
| C316.4 | Demensotration on field test of pavement |
| C316.5 | Student knows the techniques to characterize various pavement materials through relevant tests |

**Course Code: C317Course Name:CE8612 RRIGATION AND ENVIRONMENTAL ENGINEERING DRAWING**

| | |
|---|---|
| C317.1 | At the end of the semester, the student shall conceive, design and draw the irrigation and environmental e Sections. |
| C317.2 | The students after completing this course will be able to design and draw various units of Municipal wate |

**Course Code: C401Course Name:CE8701 ESTIMATION  COSTING AND VALUATION ENGINEERING**

| | |
|---|---|
| C401.1 | Estimate the quantities for buildings |
| C401.2 | Rate Analysis for all Building works, canals, and Roads and Cost Estimate. |
| C401.3 | Understand types of specifications, principles for report preparation, tender notices types |
| C401.4 | Gain knowledge on types of contracts |
| C401.5 | Evaluate valuation for building and land. |

**Course Code: C402COURSEName:CE8702  RAILWAYS, AIRPORTS, DOCKS AND HARBOUR ENGINEERING**

| | |
|---|---|
| C402.1 | Understand the methods of route alignment and design elements in Railway Planning and Constructions. |
| C402.2 | Understand the Construction techniques and Maintenance of Track laying and Railway stations. |
| C402.3 | Gain an insight on the planning and site selection of Airport Planning and design. |
| C402.4 | Analyze and design the elements for orientation of runways and passenger facility systems. |
| C402.5 | Understand the various features in Harbours and Ports, their construction, coastal protection works and |

**Course Code: C403Course Name: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 | Design and detail the various steel trusses and cantry girders |

**Course Code: C404Course Name:EN8591 MUNICIPAL SOLID WASTE MANAGEMENT**

| | |
|---|---|
| C404.1 | understanding of the nature and characteristics of municipal solid wastes and the regulatory requirements |
| C404.2 | |
| C404.3 | ability to plan and design systems for storage, collection, transport, processing anddisposal of municipal so |
| C404.4 | knowledge on the issues on solid waste management from an integrated and holistic perspective, as well as |
| C404.5 | Design and operation of sanitary landfill. |

**Course Code: C405Course Name:OML751 TESTING OF MATERIALS**

| | |
|---|---|
| C405.1 | Understand the importance of material testing |
| C405.2 | understand the mechanical testing of hardness tensile and impact |
| C405.3 | understand the applications of non destructive testing |
| C405.4 | understand the material characterization testing |
| C405.5 | understandd the importance other testing |

**Course Code: C406Course Name:CE8711CREATIVE AND INNOVATIVE PROJECT**

| | |
|---|---|
| C406.1 | On Completion of the project work students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology. |
| C406.2 | Relate the theoretical studies with experimental work or field work |
| C406.3 | Gain Knowledge on real time problem related to project work |
| C406.4 | Knowledge on design calculation based on design specification |
| C406.5 | Explore the communication skill by project presentation |

**Course Code: C407Course Name:CE8712 INDUSTRIAL TRAINING**

| | |
|---|---|
| C407.1 | The intricacies of implementation textbook knowledge into practice |
| C407.2 | The concepts of developments and implementation of new techniques |

**Course Code: C408Course Name:GE8076 Professional Ethics in Engineering**

| | |
|---|---|
| C408.1 | To inculcate the sense of social responsibility |
| C408.2 | To develop a firm ethical base |
| C408.3 | To make students realize the significance of ethics in professional environment |
| C408.4 | Ethical social and environmental awareness |
| C408.5 | Upon completion of the course, the student should be able to apply ethics in society, discuss the ethical issu in the society. |

**Course Code: C409Course Name:CE8020 Maintenance, Repair and Rehabilitation of Structures**

| | |
|---|---|
| C409.1 | the importance of maintenance and assessment method of distressed structures. |
| C409.2 | the strength and durability properties ,their effects due to climate and temperature. |
| C409.3 | recent development in concrete |
| C409.4 | the techniques for repair rand protection methods |
| C409.5 | repair, rehabilitation and retrofitting of structures and demolition methods. |

**Course Code: C410Course Name:CE8811 PROJECT WORK**

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|---|---|
| C410.1 | On Completion of the project work students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology. |
| C410.2 | Relate the theoretical studies with experimental work or field work |
| C410.3 | Gain Knowledge on real time problem related to project work |
| C410.4 | Knowledge on design calculation based on design specification |
| C410.5 | Explore the communication skill by project presentation |