SHREE VENKATESHWARA HI-TECH ENGINEERING COLLEGE
An ISO 9001:2015 Certified Institution
(Approved by AICTE, New Delhi and Affiliated to Anna University Chennai)
Sri Kalaivani Nagar, Erode-Gobi Main Road, Othakuthirai,
K.Mettupalayam Post, Gobichettipalayam – 638 455, Erode District, Tamilnadu
Web: http://www.svhec.com

List of COs for UG courses under Anna University Regulation 2017

DEPARTMENT OF CIVIL ENGINEERING

Semester : I
Course Code & Name : HS8151 & Communicative English
Year of Study : 2017 – 2018, 2018 – 2019,

Cos No.	Course Outcome
C101.1	Speak and express their opinions clearly, initiate a discussion, negotiate, argue using appropriate communicative strategies
C101.2	Write effectively and persuasively and produce different types of writing as creative, critical, analytical and evaluative writing
C101.3	Read different genres of texts, infer implied meanings and critically analyse and evaluate them for ideas as well as for method of presentation
C101.4	Realize the essentiality of the informal conversation
C101.5	Understand the different qualities expected in the interviews and they realize theimportance of GD

Semester : I
Course Code & Name : MA8151 & Engineering Mathematics – I
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
C102.1	Apply the mathematical knowledge of rules of differentiation to differentiate one variable Function
C102.2	Apply and understand the knowledge of differentiation to solve value of the function
C102.3	Classify and able to Identify the substitution rules
C102.4	Identify the Basic knowledge and understanding in one field of area and volume of solid materials
C102.5	Identify a basic knowledge and understanding techniques in solving differential equations

Semester	:	I
Course Code & Name	:	PH8151 & Engineering Physics
Year of Study	:	2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
C103.1	Analyse the various elastic behaviour of materials
C103.2	Classify the different types of lasers and optical fibres and its power losses
C103.3	Explain the different thermal properties of materials
C103.4	Illustrate the time dependent and time independent wave equations
C103.5	Understand the structures and properties of crystals

Semester	:	I
Course Code & Name	:	CY8151 & Engineering Chemistry
Year of Study	:	2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
C104.1	Understand the water parameters; requirements of boiler feed water and different water treatment techniques
C104.2	Understand the basic concept of adsorption, theories and its mechanism
C104.3	Select the appropriate eutectic mixtures of suitable alloys
C104.4	Acquire the knowledge about the manufacture of solid, liquid and gaseous fuel to meet environmental sustainability
C104.5	Relate the principle and generation of energy in battery, Nuclear reactor , Solar cells, Wind mill and fuel cell for future

Semester	:	I
Course Code & Name	:	GE8151 & Problem Solving and Python Programming
Year of Study	:	2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
C105.1	Develop algorithmic solutions to simple computational problems
C105.2	Read, write, execute by hand simple Python programs
C105.3	Structure Python programs with functions for solving problems

C105.4	Represent compound data using Python lists, tuples, dictionaries
C105.5	Read and write data from/to files in Python Programs

Semester : I
Course Code & Name : GE8152 & Engineering Graphics
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
C106.1	Graphically construct and understand the importance of conical curves and orthographical projections in engineering applications
C106.2	Draw the basic views related to projections of Lines, Planes
C106.3	Draw the projections of solids
C106.4	Sectioned and develop the surface of geometrical objects
C106.5	Interpret Isometric and Perspective views of object

Semester : I
Course Code & Name : GE8161 & Problem Solving and Python Programming Laboratory
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
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

Semester : I
Course Code & Name : BS8161 & Physics and Chemistry Laboratory
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
C108.1	Determine wavelength of mercury spectrum and velocity of sound
C108.2	Determine the Young's modulus of the materials, Band gap of the semiconductor

	materials
C108.3	Estimate the Hardness , chloride, alkalinity and dissolved oxygen in water samples
C108.4	Determine the amount of simple acid base, mixture of acids by Conductometric titration & Potentiometric titration

Semester	**:**	II
Course Code & Name	**:**	HS8251 & Technical English
Year of Study	**:**	2017 – 2018, 2018 – 2019

Cos No.	**Course Outcome**
C109.1	Speak and express their opinions clearly, initiate a discussion, negotiate, argue using appropriate communicative strategies
C109.2	Write effectively and persuasively and produce different types of writing as creative, critical, analytical and evaluative writing
C109.3	Read different genres of texts, infer implied meanings and critically analyse and evaluate them for ideas as well as for method of presentation
C109.4	Realize the essentiality of the informal conversation
C109.5	Understand the different qualities expected in the interviews and they realize the importance of GD

Semester	**:**	II
Course Code & Name	**:**	MA8251 & Engineering Mathematics – II
Year of Study	**:**	2017 – 2018, 2018 – 2019

Cos No.	**Course Outcome**
C110.1	Analyse the Eigen values and Eigen vectors, Cauley Hamilton from matrix
C110.2	Classify the basic formula and solve problem related to vector and scalar point function
C110.3	Identify and find the analytic function satisfy Cauchy – Riemann equation
C110.4	Apply Cauchy – Riemann formula, Taylors and Laurents to solve complex

	integration
C110.5	Acquire the student with Laplace transforms techniques used in variety of situations

Semester	: II
Course Code & Name	: PH8201 & Physics for Civil Engineering
Year of Study	: 2017 – 2018, 2018 – 2019

Cos No.	**Course Outcome**
C111.1	Understand the knowledge on the thermal performance of buildings.
C111.2	Understand the knowledge on the acoustic properties of buildings.
C111.3	Knowledge on various lighting designs for buildings.
C111.4	Understand knowledge on the properties and performance of engineering materials.
C111.5	Understand the hazards of buildings.

Semester	: II
Course Code & Name	: BE8251 & Basic Electrical and Electronics Engineering
Year of Study	: 2017 – 2018, 2018 – 2019

Cos No.	**Course Outcome**
C112.1	Ability to identify the electrical components and explain the characteristics of electrical machines.
C112.2	Ability to identify electronics components
C112.3	Understand the characteristics of electrical machines
C112.4	Understand the principles of digital electronics
C112.5	Understand the fundamentals of semiconductor and applications

Semester	: II
Course Code & Name	: GE8291 & Environmental Science and Engineering
Year of Study	: 2017 – 2018, 2018 – 2019

Cos No.	**Course Outcome**
C113.1	Recall the nature and facts about the environment

C113.2	Apply the scientific, technological, economic and political solutions to environmental pollutions
C113.3	Discuss the integrated themes of natural resources and its need for sustainable life style
C113.4	Relate the social issues, acquiring knowledge about the societal and legal responsibilities of individuals
C113.5	Aware about population growth, family welfare, human health and value education

Semester : II
Course Code & Name : GE8292 & Engineering Mechanics
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
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.

Semester : II
Course Code & Name : GE8261& Engineering Practices Laboratory
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
C115.1	Fabricate carpentry components and pipe connections including plumbing works.
C115.2	Use welding equipments to join the structures.
C115.3	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundary and fittings
C115.4	Carry out the basic machining operations

C115.5	Make the models using sheet metal works

Semester : II
Course Code & Name : GE8261& Engineering Practices Laboratory
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
C115.1	Fabricate carpentry components and pipe connections including plumbing works.
C115.2	Use welding equipments to join the structures.
C115.3	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundary and fittings
C115.4	Carry out the basic machining operations
C115.5	Make the models using sheet metal works

Semester : II
Course Code & Name : GE8211 & Computer Aided Building Drawing
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
C116.1	Understand the Knowledge on draft the plan, elevation and sectional views of the buildings.
C116.2	Understand the Knowledge on industrial structures using computer softwares
C116.3	Understand the Knowledge on framed buildings using computer softwares
C116.4	Concepts of sectional views of the buildings

Semester : III
Course Code & Name : MA8353 & Transforms and Partial Differential Equations
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
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 applications.
C201.3	Appreciate the physical significance of Fourier series techniques in solving one and two dimensional heat flow problems and one dimensional wave equations
C201.4	Understand the mathematical principles on transforms and partial differential equations would provide them the ability to formulate and solve some of the physical problems of engineering.
C201.5	Use the effective mathematical tools for the solutions of partial differential equations by using Z transform techniques for discrete time systems

Semester	**:**	III
Course Code & Name	**:**	CE8301 & STRENGTH OF MATERIALS I
Year of Study	**:**	2017 – 2018, 2018 – 2019

Cos No.	**Course Outcome**
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 bending.
C202.3	Calculate the deflection of beams by different methods and selection of method for determining slope or deflection.
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

Semester	**:**	III
Course Code & Name	**:**	CE8302 & FLUID MECHANICS
Year of Study	**:**	2017 – 2018, 2018 – 2019

Cos No.	**Course Outcome**

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.

Semester : III
Course Code & Name : CE8351 & SURVEYING
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
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
C204.5	Concept and principle of modern surveying.

Semester : III
Course Code & Name : CE8391 & CONSTRUCTION MATERIALS
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
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

Semester : III
Course Code & Name : CE8391 & CONSTRUCTION MATERIALS
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome

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.

Semester : III
Course Code & Name : CE8311 & CONSTRUCTION MATERIALS LABORATORY
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
C207.1	The students will have the required knowledge in the area of testing of Fine Aggregates
C207.2	The students will have the required knowledge in the area of testing of Coarse Aggregate
C207.3	The students will have the required knowledge in the area of testing of Concrete
C207.4	The students will have the required knowledge in the area of testing of Bricks and Blocks
C207.5	Components of construction elements experimentally

Semester : III
Course Code & Name : CE8361 & SURVEYING LABORATORY
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
C208.1	Students completing this course would have acquired practical knowledge on handling Theodolite
C208.2	Students completing this course would have acquired practical knowledge on handling , Tacheometry

C208.3	Students completing this course would have acquired practical knowledge on handling Total Station
C208.4	Students completing this course would have acquired practical knowledge on handling GPS
C208.5	Have adequate knowledge to carryout Triangulation and Astronomical surveying including general field marking for various engineering projects and Location of site etc.

Semester : III

Course Code & Name : HS8381 & INTERPERSONAL SKILLS/LISTENING AND SPEAKING

Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
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

Semester : IV

Course Code & Name : MA8491 & NUMERICAL METHODS

Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
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 real life situations.

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 differential equations.
C210.5	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications

Semester : IV
Course Code & Name : CE8401 & CONSTRUCTION TECHNIQUES AND PRACTICES
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
C211.1	Understand the basic concepts and techniques of solving algebraic and transcendental Equations
C211.2	Appreciate the numerical techniques of interpolation and error approximations in various intervals in real life situations.
C211.3	Apply the numerical techniques of differentiation and integration for engineering problems.
C211.4	Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations.
C211.5	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications

Semester : IV
Course Code & Name : CE8402 & STRENGTH OF MATERIALS II
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
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.

Semester : IV
Course Code & Name : CE8403 & APPLIED HYDRAULIC ENGINEERING
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
C213.1	Apply their knowledge of fluid mechanics in addressing problems in open channels.
C213.2	Able to identify 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

Semester : IV
Course Code & Name : CE8404 & CONCRETE TECHNOLOGY
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
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.

Semester	**:** IV
Course Code & Name	**:** CE8491 & SOIL MECHANICS
Year of Study	**:** 2017 – 2018, 2018 – 2019

Cos No.	**Course Outcome**
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

Semester	**:** IV
Course Code & Name	**:** CE8481 & STRENGTH OF MATERIALS LABORATORY
Year of Study	**:** 2017 – 2018, 2018 – 2019

Cos No.	**Course Outcome**
C216.1	The students will have the required knowledge in the area of Tension and Compression testing
C216.2	The students will have the required knowledge in the area of Shear and Torsion testing
C216.3	The students will have the required knowledge in the area of Impact and Hardness testing
C216.4	The students will have the required knowledge in the area of Deflection testing
C216.5	Components of structural elements experimentally.

Semester	**:** IV
Course Code & Name	**:** CE8461 & HYDRAULIC ENGINEERING LABORATORY
Year of Study	**:** 2017 – 2018, 2018 – 2019

Cos No.	**Course Outcome**
C216.1	Measure flow in pipes
C216.2	Determine frictional losses.

C216.3	Develop characteristics of pumps
C216.4	Develop characteristics of turbines
C216.5	Determination of Metacentric height

Semester : IV
Course Code & Name : HS8461 & ADVANCED READING AND WRITING
Year of Study : 2017 – 2018, 2018 – 2019

Cos No.	Course Outcome
C217.1	Write different types of essays.
C217.2	Write winning job applications.
C217.3	Read and evaluate texts critically.
C217.4	Display critical thinking in various professional contexts

Semester : V
Course Code & Name : CE8501 & Design of Reinforced Cement Concrete Elements
Year of Study : 2019-20

Cos No.	Course Outcome
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 and torsion.
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.

Semester : V
Course Code & Name : CE8502 & STRUCTURAL ANALYSIS I
Year of Study : 2019-20

Cos No.	Course Outcome
C302.1	Analyze continuous beams, pin-jointed indeterminate plane frames and rigid plane frames by strain energy method
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 and without sway.
C302.4	Analyse the indeterminate pin jointed plane frames continuous beams and rigid frames using matrix flexibility method.
C302.5	Understand the concept of matrix stiffness method and analysis of continuous beams, pin jointed trusses and rigid plane frames.

Semester	: V
Course Code & Name	: EN8491 & WATER SUPPLY ENGINEERING
Year of Study	: 2019-20

Cos No.	**Course Outcome**
C303.1	An insight into the structure of drinking water supply systems, including water transport, treatment and distribution
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

Semester	: V
Course Code & Name	: CE8591 & FOUNDATION ENGINEERING
Year of Study	: 2019-20

Cos No.	**Course Outcome**
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.

Semester	: V
Course Code & Name	: GE8071 & DISASTER MANAGEMENT
Year of Study	: 2019-20

Cos No.	**Course Outcome**
C305.1	The students will be able to understand disaster, their significance and types.

C305.2	The students will be able to understand the relationship between vulnerability, disasters, disaster prevention and risk reduction
C305.3	The students will be able to understand preliminary of approaches of Disaster Risk Reduction
C305.4	The students will be able to enhance awareness of institutional processes in the country
C305.5	The students will be able to respond to their surroundings with potential disaster response in areas where they live, with due sensitivity

Semester : V
Course Code & Name : ORO551 & RENEWABLE ENERGY SOURCES
Year of Study : 2019-20

Cos No.	Course Outcome
C306.1	Understanding the physics of solar radiation.
C306.2	Ability to classify the solar energy collectors and methodologies of storing solar energy.
C306.3	Knowledge in applying solar energy in a useful way.
C306.4	Knowledge in wind energy and biomass with its economic aspects.
C306.5	Knowledge in capturing and applying other forms of energy sources like wind, biogas and geothermal energies.

Semester : V
Course Code & Name : CE8511 & SOIL MECHANICS LABORATORY
Year of Study : 2019-20

Cos No.	Course Outcome
C307.1	Students are able to conduct tests to determine index properties of soil.
C307.2	Students are able to conduct tests to determine atterbergs limits of soil.
C307.3	Students are able to conduct tests to determine insitu density of soil.
C307.4	Students are able to conduct tests to determine compaction characteristics of soil.
C307.5	Students are able to conduct tests to determine engineering properties.

Semester : V

Course Code & Name : CE8512 & WATER AND WASTE WATER ANALYSIS LABORATORY

Year of Study : 2019-20

Cos No.	Course Outcome
C308.1	The students will be able to Quantify the pollutant concentration in water.
C308.2	The students will be able to Quantify the pollutant concentration in wastewater.
C308.3	The students will be able to Suggest the type of treatment required for the treatment.
C308.4	The students will be able to Suggest the amount of dosage required for the treatment.
C308.5	The students will be able to Examine the conditions for the growth of micro-organisms.

Semester : V

Course Code & Name : CE8513 & Survey Camp (2 weeks)

Year of Study : 2019-20

Cos No.	Course Outcome
C309.1	The students will be able to do Traverse using Total station and GPS.
C309.2	The students will be able to do Contouring.
C309.3	The students will be able to mark Offset of Buildings and Plotting the Location.
C309.4	The students will be able to determine azimuth.
C309.5	The students will be able to do Curve setting by deflection angle

Semester : VI

Course Code & Name : CE8601 DESIGN OF STEEL STRUCTURAL ELEMENTS

Year of Study : 2019-20

Cos No.	Course Outcome
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.

Semester	**:**	VI
Course Code & Name	**:**	CE8602 STRUCTURAL ANALYSIS II
Year of Study	**:**	2019-20

Cos No.	**Course Outcome**
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.

Semester	**:**	VI
Course Code & Name	**:**	CE8603 IRRIGATION ENGINEERING
Year of Study	**:**	2019-20

Cos No.	**Course Outcome**
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.

Semester	**:**	VI
Course Code & Name	**:**	CE8604 HIGHWAY ENGINEERING
Year of Study	**:**	2019-20

Cos No.	**Course Outcome**

C313.1	Get knowledge on planning and aligning of highway.
C313.2	Geometric design of highways
C313.3	Design flexible and rigid pavements.
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 pavements.

Semester	**:**	VI
Course Code & Name	**:**	EN8592 WASTEWATER ENGINEERING
Year of Study	**:**	2019-20

Cos No.	**Course Outcome**
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, self-purification 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.

Semester	**:**	VI
Course Code & Name	**:**	CE8001 GROUND IMPROVEMENT TECHNIQUES
Year of Study	**:**	2019-20

Cos No.	**Course Outcome**
C315.1	Gain knowledge on methods and selection of ground improvement techniques.
C315.2	Understand dewatering techniques and design for simple cases.
C315.3	Get knowledge on insitu treatment of cohesionless and cohesive soils.
C315.4	Understand the concept of earth renforcement and design of reinforced earth.
C315.5	Get to know types of grouts and grouting technique.

Semester	:	VI
Course Code & Name	:	CE8611 HIGHWAY ENGINEERING LABORATORY
Year of Study	:	2019-20

Cos No.	**Course Outcome**
C316.1	Student knows the techniques to characterize various pavement materials through relevant tests.
C316.2	The various requirements of cement, aggregates and water for making concrete
C316.3	The effect of admixtures on properties of concrete
C316.4	The concept and procedure of mix design as per IS method
C316.5	The importance and application of special concretes.

Semester	:	VI
Course Code & Name	:	CE8612 IRRIGATION AND ENVIRONMENTAL ENGINEERING DRAWING
Year of Study	:	2019-20

Cos No.	**Course Outcome**
C317.1	The students after completing this course will be able to design Municipal water treatment
C317.2	The students after completing this course will be able to draw Municipal water treatment
C317.3	The students after completing this course will be able to draw various units of Municipal water treatment plants
C317.4	The students after completing this course will be able to draw various units of sewage treatment plants.
C317.5	The students after completing this course will be able to analysis the units of plants.

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Semester	**:**	VI
Course Code & Name	**:**	HS8581 PROFESSIONAL COMMUNICATION
Year of Study	**:**	2019-20

Cos No.	**Course Outcome**
C318.1	Make effective presentations
C318.2	Participate confidently in Group Discussions.
C318.3	Attend job interviews and be successful in them.
C318.4	Develop adequate Soft Skills required for the workplace
C318.5	Develop adequate Language skills required for the workplace