



Kathir College of Engineering

Wisdom Tree, Avinashi Road, Neelambur, Coimbatore 641062

Criteria-2

Teaching-learning and Evaluation

Sub Criteria 2.6

Student Performance and Learning Outcomes

2.6.1: Programme and course outcomes for all Programmes offered by the institution are stated and displayed on website and communicated to teachers and students.



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PROGRAM OUTCOMES

PO1	Engineering Knowledge	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	Problem Analysis	Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO3	Design/development of solutions	Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations
PO4	Conduct investigations of complex problems	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO5	Modern tool usage	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO6	The engineer and society	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO7	Environment and sustainability	Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.



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PO9	Individual and team work	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO10	Communication	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO11	Project management and finance	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO12	Life-long learning	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.




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PROGRAM SPECIFIC OUT COMES OF CIVIL ENGINEERING

PSO1	Analyze, design, construct, manage, maintain and operate infrastructure and development projects.
PSO2	Evaluate the environmental collision of various projects and take required measures to control environmental issues.

PROGRAM SPECIFIC OUT COMES OF COMPUTER SCIENCE AND ENGINEERING

PSO1	Design data structures and database management systems with a recurrent programming language to provide software solutions.
PSO2	In the fields of artificial intelligence, big data, and cloud computing, use problem-solving techniques.

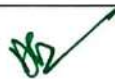
PROGRAM SPECIFIC OUT COMES OF ELECTRONICS AND COMMUNICATION ENGINEERING

PSO1	To apply the Engineering knowledge to develop Innovative Ideas for existing / Novel problems through information and communication technologies (ICT).
PSO2	To design the Analog and Digital system and practice for Developing Quality products.
PSO3	Understand social needs and environmental concerns with ethical responsibility to become a successful professional.

PROGRAM SPECIFIC OUT COMES OF ELECTRICAL AND ELECTRONICS ENGINEERING

PSO1	Ability to Integrate the fundamental knowledge of mathematics, science, electrical engineering to solve complex problems in electrical, electronics and interdisciplinary areas.
PSO2	Ability to design and meet the demands of industry using the state of the art components and software tools




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PROGRAM SPECIFIC OUT COMES OF MECHANICAL ENGINEERING

PSO1	Understand the requirements and play their professional role to solve real-world problems in the mechanical engineering domains such as manufacturing, design, thermal, fluid power and materials engineering.
PSO2	Work in teams to create products by integrating multi disciplinary modules.




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DEPARTMENT OF SCIENCE & HUMANITIES



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COURSE OUTCOMES

Regulation- 2017 - UG

YEAR/SEMESTER : I/I	
C101/HA8151- COMMUNICATIVE ENGLISH	
C101.1	Speak clearly, confidently, comprehensibly, and communicate with one or many listeners using appropriate communicative strategies.
C101.2	Write cohesively and coherently and flawlessly avoiding grammatical errors, using a wide vocabulary range, organizing their ideas logically on a topic.
C101.3	Read different genres of texts adopting various reading strategies.
C101.4	Listen/view and comprehend different spoken discourses/excerpts in different accents.
C101.5	Gaining capacity, skills enabling the students to write personal letters, official letters and E-mails in English effectively. Enabling students to enhance their conversational skills in spoken and written forms.
C102/MA8151-ENGINEERING MATHEMATICS -I	
C102.1	Have basic knowledge and understanding in one field of materials, integral and differential calculus.
C102.2	Utilize methods of integration to compute volumes of objects with circular shaped aspects, and compute lengths of curves.
C102.3	Read and understand problem descriptions, then be able to formulate equations modelling the problem usually by applying geometric or physical principles.
C102.4	Use integration to compute problems important in physics and engineering.
C102.5	Find the area of plane curves and volume of solids using double and triple integrals.
C103/PH8151 - ENGINEERING PHYSICS	
C103.1	Have knowledge on the basics of physics related to properties of matter, optics, and acoustics.




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C103.2	Apply these fundamental principles to solve practical problems related to materials used for engineering applications.
C103.3	Understand working principle of a LASER, components and working of different laser system and their engineering applications
C103.4	Understand the principle and working of particle detectors
C103.5	Examine the characteristics of laser and optical fiber.
C104/CY8151 ENGINEERING CHEMISTRY	
C104.1	Apply this knowledge to the analysis and design of batteries.
C104.2	Phase rule concept is used to know the heat treatment process of alloy.
C104.3	Know the properties of Lubricants.
C104.4	The knowledge gained on polymer chemistry, thermodynamics, Spectroscopy, phase rule and nano materials will provide a strong platform to understand the concepts on these subjects for further learning.
C104.5	Outline the synthesis, characteristics and the applications of nano materials.
C105/GE8151 PROBLEM SOLVING AND PYTHON PROGRAMMING	
C105.1	Develop algorithmic solutions to simple computational problems.
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. Read and write data from/to files in Python Programs.
C106/GE8152-ENGINEERING GRAPHICS	
C106.1	Perform free hand sketching of basic geometrical constructions and multiple views of objects.
C106.2	Do orthographic projection of lines and plane surfaces.
C106.3	Draw projections and solids and development of surfaces.



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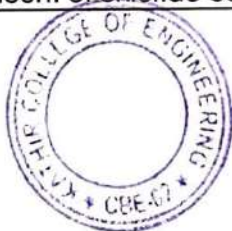


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C106.4	Prepare isometric and perspective sections of simple solids.
C106.5	Demonstrate computer aided drafting.
C107/GE8161-Problem Solving and Python Programming Laboratory	
C107.1	Write, test, and debug simple Python programs.
C107.2	Implement Python 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.
C108/BS8161-Chemistry Laboratory	
C108.1	The students will be outfitted with hands-on knowledge in the quantitative chemical analysis of water quality related to parameters.
C108.2	To determine the amount of metal ions through volumetric and spectroscopic techniques
C108.3	To analyse and determine the composition of alloys
C108.4	To quantitatively analyse the impurities in solution by electroanalytical techniques
C109/BS8161 - PHYSICS AND CHEMISTRY LABORATORY	
C109.1	Apply principles of elasticity, optics and thermal properties for Engineering applications
C109.2	Determine the Modulus of elasticity of materials and Coefficient of Viscosity of liquids and to determine the Thermal Conductivity of bad conductor using Lee's disc method
C109.3	Measure the wavelength of prominent spectral lines of Mercury Spectrum and particle size of powder using diffraction phenomenon and thickness of thin materials using interference phenomenon, Determine the band gap energy of a semiconductor
C109.4	Calculate water quality parameters such as hardness, alkalinity of the given water sample, Estimate the amount of the given acids using conductometric titrations.
C109.5	Estimate the amount of the given acids using pH titrations, Determine the amount of iron content in the given substance using potentiometric titration, Determine the amount of chloride content in the given water sample.



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SEMESTER -II	
C201/HS8251-TECHNICAL ENGLISH	
C201.1	Speak convincingly, express their opinions clearly, initiate a discussion, negotiate, and argue using appropriate communicative strategies.
C201.2	Write effectively and persuasively and produce different types of writing such as narration, description, exposition and argument as well as creative, critical, analytical and evaluative writing.
C201.3	Read different genres of texts, infer implied meanings and critically analyse and evaluate them for ideas as well as for method of presentation.
C201.4	Listen/view and comprehend different spoken excerpts critically and infer unspoken and implied meanings.
C201.5	Enhancing student's skills in report writing, job application, paragraph writing and other forms of writing skills.
C202/MA8251-ENGINEERING MATHEMATICS – II	
C202.1	Develop the fundamentals and basic concepts in vector calculus, ODE, Laplace transform and complex functions.
C202.2	Solve problems related to engineering applications by using these techniques.
C202.3	To have an ability of mathematical modelling of systems using differential equations and ability to solve the differential equations.
C202.4	Use Green's theorem to evaluate line integrals along simple closed contours on the plane and use Stokes' theorem to give a physical interpretation of the curl of a vector field.
C202.5	Expand functions of two variables as Taylor's and Laurent's series and evaluate Contour integrals using Cauchy's formula.
C203/PH8253-Physics For Electronics Engineering	
C203.1	Knowledge on classical and quantum electron theories, and energy band structures
C203.2	Knowledge on basics of semiconductor physics and its applications in various devices



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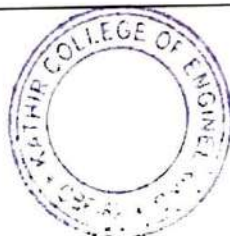


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C203.3	Knowledge on magnetic and dielectric properties of materials
C203.4	Understanding on the functioning of optical materials for optoelectronics
C203.5	Understanding on the functioning of Nano electronic devices
C204/BE8254/BASIC ELECTRICAL AND INSTRUMENTATION ENGINEERING	
C204.1	Fundamentals of semiconductor and basic theorems used in Electrical circuits
C204.2	Design amplifier circuits under CB, CE, CC Configurations.
C204.3	Design the Adders – Flip-Flops – Registers and Counters with logic gates.
C204.4	Discuss the Principles of Amplitude and Frequency Modulations and various blocks communication Systems
C204.5	Demonstrate the working of Television systems, FAX machines and micro wave systems.
C205/C113 /EC8251/CIRCUIT ANALYSIS	
C205.1	Develop the capacity to analyze electrical circuits, apply the circuit theorems in real time
C205.2	Design and understand and evaluate the AC and DC circuits.
C205.3	Practical implications of the fundamentals of Ohm's law, Kirchhoff's current and voltage laws
C205.4	Accurate measurement of voltage, current, power and impedance of any circuit
C205.5	DC analysis, Transient analysis and Frequency analysis of a given circuit depending on types of elements
C205.6	Practical implementation of the fundamental electrical theorems and modeling of simple electrical systems
C206/C114/ EC8252/ELECTRONIC DEVICES	
C206.1	Describe the principle and characteristics of semiconductor diode
C206.2	Analyze various transistor configurations
C206.3	Construct large signal modeling and small signal modeling of a transistor
C206.4	Describe the principle of operation and characteristics of special Semiconductor diodes
C206.5	Discuss the operation of various semiconductor photo devices and power electronic devices
C207/ EC8261/CIRCUITS AND DEVICES LABORATORY	
C207.1	Identify the basic devices and its configurations




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C207.2	Analyze the resistive circuits with different sources
C207.3	Obtain the resonance for different configurations of RLC
C207.4	Explain the response of RLC circuit with different inputs
C207.5	Understand the operation of basic solid state devices
C208 / GE8261 / ENGINEERING PRACTICES LABORATORY	
C208.1	Gets exposure regarding Joining operations in engineering materials.
C208.2	Carry out the basic machining operations in engineering materials.
C208.3	Carry out basic home electrical works and appliances
C208.4	Measure the electrical quantities
C208.5	Understand basic electronic components.
C208.6	Integrate the components and gates using soldering practices.




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DEPARTMENT OF CIVIL ENGINEERING

COURSE OUTCOMES (SEM III – VIII)_Regulation– 2017 – UG

YEAR/SEMESTER : II/III	
C301/MA8353-TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS	
C301.1	Analyze Partial Differential Equations in various methods.
C301.2	Solving Fourier Series for different types of functions.
C301.3	Computing the solutions of the heat equation, wave equation and the Laplace equation subject to boundary conditions
C301.4	Deduce the Gaussian function in Self reciprocal form using Fourier Transforms.
C301.5	Formation of finite difference method in Z-transforms.
C302/ CE8301- Strength of Materials I	
C302.1	The students will be able to understand the concepts of stress and strain, principal stresses and principal planes
C302.2	The students will be able to determine Shear force and bending moment in beams and understand concept of theory of simple bending
C302.3	The students will be able to calculate the deflection of beams by different methods and selection of method for determining slope or deflection
C302.4	The students will be able to apply basic equation of torsion in design of circular shafts and helical springs
C302.5	The students will be able to analyze the pin jointed plane and space trusses
C303/ CE8302- Fluid Mechanics	
C303.1	Get a basic knowledge of fluids in static, kinematic and dynamic equilibrium
C303.2	Understand and solve the problems related to equation of motion
C303.3	Gain knowledge about dimensional and model analysis
C303.4	Learn types of flow and losses of flow in pipes




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C303.5	Understand and solve the boundary layer problems
C304/ CE 8351- Surveying	
C304.1	Understand the use of various surveying instruments and mapping
C304.2	Measure Horizontal angle and vertical angle using different instruments
C304.3	Analyze methods of Leveling and setting Levels with different instruments
C304.4	Understand concepts of astronomical surveying and methods to determine time, longitude, latitude, and azimuth
C304.5	Apply Concept and principle of modern surveying
C305/ CE 8391- Construction Materials	
C305.1	Compare the properties of most common and advanced building materials
C305.2	Understand the typical and potential applications of lime, cement and aggregates
C305.3	Know the production of concrete and also the method of placing and making of concrete elements
C305.4	Understand the applications of timbers and other materials
C305.5	Analyze the importance of modern material for construction
C306/ CE8392- Engineering Geology	
C306.1	Understand the importance of geological knowledge such as earth, earthquake, volcanism and the action of various geological agencies
C306.2	Get basic knowledge on properties of minerals
C306.3	Understand the methods of study on geological structure
C306.4	Gain knowledge about types of rocks, their distribution and uses
C306.5	Analyze the application of geological investigation in projects such as dams, tunnels, bridges, roads, airport and harbor
C307/ CE8311 Construction Materials Laboratory	
C307.1	Understand the behavior of Fine Aggregates
C307.2	Understand the behavior of Coarse Aggregates
C307.3	Analyze the behavior of Concrete
C307.4	Understand the behavior of Bricks and Blocks



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C207.5	Gain Knowledge in testing of construction materials and components of construction elements experimentally
C308/ CE8361- Surveying Laboratory	
C308.1	Study of chains and its accessories, Aligning, Ranging, Chaining and Marking Perpendicular offset
C308.2	Acquire practical knowledge on handling basic survey instruments including Tacheometry, Theodolite
C308.3	Acquire practical knowledge on handling modern survey instruments including Total station, GPS
C308.4	Gain adequate knowledge in Triangulation and Astronomical surveying.
C308.5	Acquire knowledge about Survey field techniques
C309/HS8381-INTERPERSONAL SKILLS / LISTENING & SPEAKING	
C309.1	Take international examination such as IELTS and TOEFL
C309.2	Participate in Group Discussion.
C309.3	Successfully answer questions in Interviews.
C309.4	Make effective Presentations.
C309.5	Participate confidently and appropriately in conversations both formal and informal
YEAR/SEMESTER : II/IV	
C401/ MA8491- Numerical Methods	
C401.1	Understand the basic concepts and techniques of solving algebraic and transcendental equations
C401.2	Appreciate the numerical techniques of interpolation and error approximations in various intervals in real life situations
C401.3	Apply the numerical techniques of differentiation and integration for engineering problems
C401.4	Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations
C401.5	Solve the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications
C402/ CE8401- Construction Techniques and Practices	




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C402.1	Know the different construction techniques and structural systems
C402.2	Understand various techniques and practices on masonry construction, Flooring, and roofing
C402.3	Plan the requirements for substructure construction
C402.4	Know the methods and techniques involved in the construction of various types of super structures
C402.5	Select, maintain and operate hand and power tools and equipment used in the building construction sites
C403/ CE8402- Strength of Materials II	
C403.1	Determine the strain energy and compute the deflection of determinate beams, frames and trusses using energy principles
C403.2	Analyze propped cantilever, fixed beams and continuous beams using theorem of three moment equation for external loadings and support settlements
C403.3	Find the load carrying capacity of columns and stresses induced in columns and cylinders
C403.4	Determine principal stresses and planes for an element in three-dimensional state of stress and study various theories of failure
C403.5	Determine the stresses due to Unsymmetrical bending of beams, locate the shear center, and find the stresses in curved beam
C404/ CE8403- Applied Hydraulic Engineering	
C404.1	Apply their knowledge of fluid mechanics in addressing problems in open channels
C404.2	Able to identify an effective section for flow in different cross sections
C404.3	To solve problems in uniform, gradually and rapidly varied flows in steady state conditions
C404.4	Understand the principles, working and application of turbines
C404.5	Understand the principles, working and application of pumps
C405/ CE8404-S Concrete Technology	
C405.1	Understand various requirements of cement, aggregates and water for making concrete
C405.2	Analyze effect of admixtures on properties of concrete
C405.3	Apply concept and procedure of mix design as per IS method
C405.4	Apply properties of concrete at fresh and hardened state



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C405.5	Gain knowledge on importance and application of special concretes
C406/ CE8491- Soil Mechanics	
C406.1	Classify the soil and assess the engineering properties, based on index properties
C406.2	Understand the stress concepts in soils
C406.3	Understand and identify the settlement in soils
C406.4	Determine the shear strength of soil
C406.5	Analyze both finite and infinite slopes
C407/ CE8481- Strength of Materials Laboratory	
C407.1	Study the action of various forces and determination of their characteristics experimentally
C407.2	Gain knowledge in the area of testing on steel rod
C407.3	Acquire Knowledge in the area of testing on wood
C407.4	Apply the procedures in the area of testing on metal
C407.5	Apply the techniques in the area of testing on spring
C408/ CE8461- Hydraulic Engineering Laboratory	
C408.1	The students will be able to measure flow in pipes and determine frictional losses
C408.2	The students will be able to develop characteristics of pumps and turbines
C408.3	Students should be able to verify the principles studied in theory by performing Flow Measurement
C408.4	Students should be able to verify the principles studied in theory by performing Losses in Pipes
C408.5	Students should be able to verify the principles studied in theory by Determination of Metacentric height
C409/HS8461-ADVANCED READING AND WRITING	
C409.1	Make effective Presentations.
C409.2	Participate in Group Discussion.
C409.3	Successfully answer questions in Interviews.
C409.4	Take international examination such as IELTS and TOEFL




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C409.5	Participate confidently and appropriately in conversations both formal and informal
YEAR/SEMESTER : III/V	
C501/ CE 8501- Design of Reinforced Cement Concrete Elements	
C501.1	Understand the various design methodologies for the design of RC elements
C501.2	Know the analysis and design of flanged beams by limit state method and sign of beams for shear, bond and torsion
C501.3	Design the various types of slabs and staircase by limit state method
C501.4	Design columns for axial, uniaxial and biaxial eccentric loadings
C501.5	Design footing by limit state method
C502/ CE8502- Structural Analysis I	
C502.1	Analyze continuous beams, pin-jointed indeterminate plane frames and rigid plane frames by strain energy method
C502.2	Analyze the continuous beams and rigid frames by slope deflection method
C502.3	Understand the concept of moment distribution and analysis of continuous beams and rigid frames with and without sway
C502.4	Analyze the indeterminate pin jointed plane frames continuous beams and rigid frames using matrix flexibility method
C502.5	Understand the concept of matrix stiffness method and analysis of continuous beams, pin jointed trusses and rigid plane frames
C503/ EN8491- Water Supply Engineering	
C503.1	Gain insight into the structure of drinking water supply systems, including water transport, treatment and distribution
C503.2	Acquire knowledge in various unit operations and processes in water treatment
C503.3	Design the various functional units in water treatment
C503.4	Understand water quality criteria and standards, and their relation to public health
C503.5	Design and evaluate water supply project alternatives on basis of chosen criteria
C504/ CE8591- Foundation Engineering	
C504.1	Understand the site investigation, methods and sampling
C504.2	Gain knowledge on bearing capacity and testing methods
C504.3	Design shallow footings



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C504.4	Determine the load carrying capacity, settlement of pile foundation
C504.5	Determine the earth pressure on retaining walls and analysis for stability
C505/ GI8013- Advanced Surveying	
C505.1	Gain knowledge on astronomical surveying
C505.2	Perform photogrammetric surveying and interpretation
C505.3	Solve the field problems with Total station
C505.4	Acquire knowledge on GPS surveying and the data processing
C505.5	Understand the route surveys and tunnel alignments
C506/ CE8511- Soil Mechanics Laboratory	
C506.1	To develop skills to test the soils for their index and engineering properties and to characterize the soil based on their properties
C506.2	To develop skills to test the soils for determination of Index Properties
C506.3	To develop skills to test the soils for determination of in-situ density and compaction characteristics
C506.4	To develop skills to test the soils for determination of engineering properties
C506.5	To conduct tests to determine both the index and engineering properties of soils and to characterize the soil based on their properties
C507/ CE8512- Water and Waste Water Analysis Laboratory	
C507.1	To analyze the physical, chemical and biological characteristics of water and wastewater
C507.2	To quantify the dosage requirement for coagulation process
C507.3	To study the growth of micro-organism and its quantification
C507.4	To quantify the sludge
C507.5	To Quantify the pollutant concentration in water and wastewater
C508/ CE8513- Survey Camp	
C508.1	Enable the students to get practical training in the field work
C508.2	Involve work on a large area
C508.3	Student shall have mapped and contoured the area
C508.4	Use of GPS to determine latitude and longitude and locate the survey camp location



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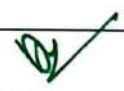
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C508.5	Survey exercises in other area also based on site condition to give good exposure on survey
YEAR/SEMESTER : III/VI	
C601/ CE8601- Design of Steel Structural Elements	
C601.1	Understand the concepts of various design philosophies
C601.2	Design common bolted and welded connections for steel structures
C601.3	Design tension members and understand the effect of shear lag
C601.4	Understand the design concept of axially loaded columns and column base connections
C601.5	Design laterally restrained and unrestrained steel beams
C602/ CE8602- Structural Analysis II	
C602.1	Draw influence lines for statically determinate structures and calculate critical stress resultants
C602.2	Understand Muller Breslau principle and draw the influence lines for statically indeterminate beams
C602.3	Analyze of three hinged, two hinged and fixed arches
C602.4	Analyze the suspension bridges with stiffening girders
C602.5	Understand the concept of Plastic analysis and the method of analyzing beams and rigid frames
C603/ CE8603- Irrigation Engineering	
C603.1	Have knowledge and skills on crop water requirements
C603.2	Understand the methods and management of irrigation
C603.3	Gain knowledge on types of Impounding structures
C603.4	Understand methods of irrigation including canal irrigation
C603.5	Get knowledge on water management on optimization of water use
C604/ CE8604- Highway Engineering	
C604.1	Get knowledge on planning and aligning of highway
C604.2	Geometric design of highways
C604.3	Design flexible and rigid pavements




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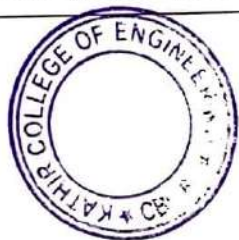


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C604.4	Gain knowledge on Highway construction materials, properties, testing methods
C604.5	Understand the concept of pavement management system, evaluation of distress and maintenance of pavements
C605/ EN8592- Wastewater Engineering	
C605.1	An ability to estimate sewage generation and design sewer system including sewage pumping stations
C605.2	The required understanding on the characteristics and composition of sewage, self-purification of streams
C605.3	An ability to perform basic design of the unit operations and processes that are used in sewage treatment
C605.4	Understand the standard methods for disposal of sewage
C605.5	Gain knowledge on sludge treatment and disposal
C606/ CE8001 Ground Improvement Techniques	
C606.1	To understand basics of Automobile Engineering, conversant with drive train and transmission.
C606.2	To make the student conversant with Axles, Steering System & Tyre Wheel assembly and to understand basic and types of steering system
C606.3	To make the student conversant with Suspension and Brake System
C606.4	To make the student conversant with Vehicle Performance & Safety also able to understand basics of Vehicle maintenance.
C606.5	To make the student conversant with Vehicle Maintenance & Garage Practice also able to perform garage practices
C607/ CE8611- Highway Engineering Laboratory	
C607.1	To learn the principles and procedures of testing of highway materials
C607.2	Techniques to characterize various test on aggregates
C607.3	Techniques to characterize various test on bitumen
C607.4	Techniques to characterize various tests on bituminous mixes
C607.5	Demonstration of any one field testing equipment like skid resistance tester/ Benkelman beam etc.
C608/ CE8612- Irrigation and Environmental Engineering Drawing	
C608.1	Student shall conceive, design and draw the irrigation and environmental engineering structures in detail showing the plan, elevation and Sections
C608.2	Course will be able to design and draw various units of Municipal water treatment



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	plants
C608.3	Course will be able to design and draw various units of sewage treatment plants
C608.4	Design principles irrigation engineering
C608.5	Design principles environmental engineering
C609/HS8581-PROFESSIONAL COMMUNICATION	
C609.1	Take international examination such as IELTS and TOEFL
C609.2	Participate in Group Discussion.
C609.3	Successfully answer questions in Interviews.
C609.4	Make effective Presentations.
C609.5	Participate confidently and appropriately in conversations both formal and informal
YEAR/SEMESTER : IV/VII	
C701/ CE8701- Estimation, Costing and Valuation Engineering	
C701.1	Estimate the quantities for buildings
C701.2	Rate Analysis for all Building works, canals, and Roads and Cost Estimate
C701.3	Understand types of specifications, principles for report preparation, tender notices types
C701.4	Gain knowledge on types of contracts
C701.5	Evaluate valuation for building and land
C702/ CE8702- Railways, Airports, Docks and Harbor Engineering	
C702.1	Understand the methods of route alignment and design elements in Railway Planning and Constructions
C702.2	Understand the Construction techniques and Maintenance of Tracklaying and Railway stations
C702.3	Gain an insight on the planning and site selection of Airport Planning and design
C702.4	Analyze and design the elements for orientation of runways and passenger facility systems
C702.5	Understand the various features in Harbors and Ports, their construction, coastal protection works and coastal Regulations to be adopted
C703/ CE8703- Structural Design and Drawing	




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C703.1	Design and draw reinforced concrete Cantilever and Counterfort Retaining Walls
C703.2	Design and draw flat slab as per code provisions
C703.3	Design and draw reinforced concrete and steel bridges
C703.4	Design and draw reinforced concrete and steel water tanks
C703.5	Design and detail the various steel trusses and gantry girders
C704/ CE87111 Creative and Innovative Project	
C704.1	Acquire knowledge in Civil Engineering to do a mini project
C704.2	Familiarize with designs, fabrication or algorithms
C704.3	Design buildings expressing their ideas in a novelway
C704.4	To identify a topic of interest in their course of study
C704.5	Carryout the design / fabrication or develop computer code
C705/ CE8007 Traffic Engineering and Management	
C705.1	Overview of Traffic engineering, traffic regulation, management and traffic safety with integrated approach
C705.2	Analyze traffic problems and plan for traffic systems various uses
C705.3	Design Channels, Intersections, signals and parking arrangements
C705.4	Develop Traffic management Systems
C705.5	Implement Intelligent Transport System for traffic management, enforcement and education
C706/ CE8712 INDUSTRIAL TRAINING	
C706.1	To train the students in field work so as to have a firsthand knowledge of practical problems in carrying out engineering tasks
C706.2	To develop skills in facing and solving the field problems
C706.3	To undertake training in reputed civil engineering companies for the specified duration
C706.4	To implement the intricacies of textbook knowledge into practice
C706.5	To apply the concepts of developments and implementation of new techniques
C707/ GE8076- Professional Ethics in Engineering	
C707.1	Simulate the dynamic system by using MAT lab software.




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C707.2	Simulate the mechanism by using multi-body dynamic software
C707.3	Analyze the stresses for trusses and beams using analysis software
C707.4	Analyze the stresses for axis-symmetric components by using analysis software
C707.5	Analyze the response of vibrating system analysis software
YEAR/SEMESTER : IV/VIII	
C801/ CE8020- Maintenance, Repair and Rehabilitation of Structures	
C801.1	Understand importance of maintenance and assessment method of distressed structures
C801.2	Analyze the strength and durability properties, their effects due to climate and temperature
C801.3	Gain knowledge in recent development in concrete
C801.4	Assess the techniques for repair and protection methods
C801.5	Apply Repair, rehabilitation and retrofitting of structures and demolition methods
C802/ CE8811- Project work	
C802.1	Identify a topic in advanced areas of Civil Engineering Identify methods and materials to carry out experiments/develop code
C802.2	Review literature to identify gaps and define objectives & scope of the work Reorganize the procedures with a concern for society, environment and ethics
C802.3	Generate and implement innovative ideas for social benefit Analyze and discuss the results to draw valid conclusions
C802.4	Develop a prototypes/models, experimental set-up and software systems necessary to meet the objectives Prepare a report as per recommended format and defend the work
C802.5	Explore the possibility of publishing papers in peer reviewed journals/conference proceedings




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