



# ESHAN COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi, Affiliated to Dr. A.P.J Abdul Kalam Technical University, Lucknow)  
Sahzadpur Pauri, NH-2, Agra-Mathura Highway, Mathura-281122, Uttar Pradesh  
Website: [www.eshancollege.com](http://www.eshancollege.com)

## Department of Civil Engineering (CE)



## Programme: B.Tech. Civil Engineering

### Course Outcomes (COs)

#### 2<sup>nd</sup> Year (3<sup>rd</sup> Semester)

Course Code	Course Name	<u>Course Outcomes (COs)</u>	
		<i>At the completion of the course, students will be able to:</i>	
KAS303	Maths-III	CO1	Remember the concept of Laplace transform and apply in solving real life problems
		CO2	Understand the concept of Fourier and Z – transform to evaluate engineering problems
		CO3	Remember the concept of Formal Logic, Group and Rings to evaluate real life problems
		CO4	Apply the concept of Set, Relation, function and Counting Techniques
		CO5	Apply the concept of Lattices and Boolean Algebra to create Logic Gates and Circuits, Truth Table, Boolean Functions, Karnaugh Maps



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<b>KOE038/ 048</b>	<b>Electronics Engineering</b>	<b>CO1</b>	Understand the concept of PN junction and special purpose diodes
		<b>CO2</b>	Study the application of conventional diode and semiconductor diode
		<b>CO3</b>	Analyze the I-V characteristics of BJT and FET
		<b>CO4</b>	Analyze the of Op-Amp, amplifiers, integrator, and differentiator
		<b>CO5</b>	Understand the concept of digital storage oscilloscope and compare of DSO with analog oscilloscope
<b>KAS301</b>	<b>Technical Communication</b>	<b>CO1</b>	Understand the nature and objective of Technical Communication relevant for the work place as Engineers
		<b>CO2</b>	Utilize the technical writing for the purposes of Technical Communication and its exposure in various dimensions
		<b>CO3</b>	Imbibe inputs by presentation skills to enhance confidence in face of diverse audience
		<b>CO4</b>	Have a vast know-how of the application of the learning to promote their technical competence
		<b>CO5</b>	Evaluate their efficacy as fluent & efficient communicators by learning the voice-dynamics
<b>KVE 301</b>	<b>Universal Human Values and Professional Ethics</b>	<b>CO1</b>	Understand value inputs, need, basic guidelines, content and process of value education in current scenario of the society
		<b>CO2</b>	Understand the meaning of Harmony in the Self the Co-existence of Self and Body
		<b>CO3</b>	Understand the value of harmony in human-human relationships and explore their role in ensuring a harmonious society
		<b>CO4</b>	Understand the harmony in nature and existence, and work out their mutually fulfilling participation in the nature
		<b>CO5</b>	Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment during work
<b>KCE 301</b>	<b>Engineering Mechanics</b>	<b>CO1</b>	Use scalar and vector analytical techniques for analyzing forces in statically determinate structures
		<b>CO2</b>	Apply fundamental concepts of kinematics and kinetics of particles to the analysis of simple, practical problems
		<b>CO3</b>	Apply basic knowledge of mathematics and physics to solve real-world problems
		<b>CO4</b>	Understand basic dynamics concepts – force, momentum, work and energy
		<b>CO5</b>	Understand and be able to apply Newton's laws of motion
<b>KCE 302</b>	<b>Surveying &amp; Geomatics</b>	<b>CO1</b>	Describe the function of surveying and work with survey instruments, take observations, and prepare plan, profile, and cross-section and perform calculations.
		<b>CO2</b>	Calculate, design and layout horizontal and vertical curves.



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		<b>CO3</b>	Operate a total station and GPS to measure distance, angles, and to calculate differences in elevation. Reduce data for application in a geographic information system.
		<b>CO4</b>	Relate and apply principles of photogrammetry for surveying
		<b>CO5</b>	Apply principles of Remote Sensing and Digital Image Processing for Civil Engineering problems.
<b>KCE 303</b>	<b>Fluid Mechanics</b>	<b>CO1</b>	Understand the broad principles of fluid statics, kinematics and dynamics
		<b>CO2</b>	Understand definitions of the basic terms used in fluid mechanics
		<b>CO3</b>	Understand classifications of fluid flow
		<b>CO4</b>	Apply the continuity, momentum and energy principle
		<b>CO5</b>	Apply dimensional analysis
<b>KCE 351</b>	<b>Building Planning and Drawing Lab</b>	<b>CO1</b>	Apply the principles of planning and bye-laws (National building code) used for building planning
		<b>CO2</b>	Draft the plan, elevation and sectional views of the buildings using AutoCAD
<b>KCE 352</b>	<b>Surveying and Geomatics Lab</b>	<b>CO1</b>	Demonstrate and handle various conventional surveying instruments such as chain/tape, compass, theodolite, auto-level in the field of civil engineering applications such as highway profiling, setting out curves etc
		<b>CO2</b>	Measure distances, horizontal & vertical angles and coordinates using electronic total station
		<b>CO3</b>	Apply the principles of photogrammetric surveying and take observations using mirror stereoscope and parallax bar
		<b>CO4</b>	Measure coordinates using GPS and understand digitization using GIS and visual interpretation of standard FCC
<b>KCE 353</b>	<b>Fluid Mechanics Lab</b>	<b>CO1</b>	Evaluate Bernoulli's Theorem & Momentum equation in pipe flow
		<b>CO2</b>	Apply continuity equation and flow visualisation in pipe flow
		<b>CO3</b>	Verify the concept of buoyancy and hence metacentre point
		<b>CO4</b>	Illustrate the concept of wind tunnel
<b>KCE354</b>	<b>Mini Project or Internship Assessment</b>	<b>CO1</b>	Understand a system, component or process to meet desired progress of project
		<b>CO2</b>	Prepare Project Report for a project in Civil Engineering domain
<b>KNC 301</b>	<b>Computer System Security</b>	<b>CO1</b>	Discover software bugs that pose cyber security threats and to explain how to fix the bugs to mitigate such threats
		<b>CO2</b>	Discover cyber-attack scenarios to web browsers and web servers and to explain how to mitigate such threats
		<b>CO3</b>	Discover and explain mobile software bugs posing cyber security threats, explain and recreate exploits, and to explain mitigation techniques



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		<b>CO4</b>	Articulate the urgent need for cyber security in critical computer systems, networks, and world wide web, and to explain various threat scenarios
		<b>CO5</b>	Articulate the well-known cyber-attack incidents, explain the attack scenarios, and explain mitigation techniques
<b>KNC302</b>	<b>Python Programming</b>	<b>CO1</b>	Read and write simple Python programs
		<b>CO2</b>	Develop Python programs with conditionals and loops
		<b>CO3</b>	Define Python functions and to use Python data structures – lists, tuples, dictionaries
		<b>CO4</b>	Do input/output with files in Python
		<b>CO5</b>	Do searching, sorting and merging in Python

### 2<sup>nd</sup> Year (4<sup>th</sup> Semester)

Course Code	Course Name	<u>Course Outcomes (COs)</u>	
		<i>At the completion of the course, students will be able to:</i>	
<b>KAS403</b>	<b>Mathematics-III</b>	<b>CO1</b>	Remember the concept of Laplace transform and apply in solving real life problems
		<b>CO2</b>	Understand the concept of Fourier and Z – transform to evaluate engineering problems
		<b>CO3</b>	Remember the concept of Formal Logic, Group and Rings to evaluate real life problems
		<b>CO4</b>	Apply the concept of Set, Relation, function and Counting Techniques
		<b>CO5</b>	Apply the concept of Lattices and Boolean Algebra to create Logic Gates and Circuits, Truth Table, Boolean Functions, Karnaugh Maps
<b>KVE401</b>	<b>Universal Human Values</b>	<b>CO1</b>	Understand the significance of value inputs in a classroom, distinguish between values and skills, understand the need, basic guidelines, content and process of value education, explore the meaning of happiness and prosperity and do a correct appraisal of the current scenario in the society
		<b>CO2</b>	Distinguish between the Self and the Body, understand the meaning of Harmony in the Self the Co-existence of Self and Body



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		<b>CO3</b>	Understand the value of harmonious relationship based on trust, respect and other naturally acceptable feelings in human-human relationships and explore their role in ensuring a harmonious society
		<b>CO4</b>	Understand the harmony in nature and existence, and work out their mutually fulfilling participation in the nature
		<b>CO5</b>	Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work
<b>KAS401</b>	<b>Technical Communication</b>	<b>CO1</b>	Understand the nature and objective of Technical Communication relevant for the work place as Engineers
		<b>CO2</b>	Utilize the technical writing for the purposes of Technical Communication and its exposure in various dimensions
		<b>CO3</b>	Imbibe inputs by presentation skills to enhance confidence in face of diverse audience
		<b>CO4</b>	Have a vast know-how of the application of the learning to promote their technical competence
		<b>CO5</b>	To evaluate their efficacy as fluent & efficient communicators by learning the voice-dynamics
<b>KCE401</b>	<b>Material Testing &amp; Construction Practices</b>	<b>CO1</b>	Identify various building materials and to understand their basic properties.
		<b>CO2</b>	Understand the use of non-conventional civil engineering materials.
		<b>CO3</b>	Study suitable type of flooring and roofing in the construction process
		<b>CO4</b>	Characterize the concept of plastering, pointing and various other building services.
		<b>CO5</b>	Exemplify the various fire protection, sound and thermal insulation techniques, maintenance and repair of buildings.
<b>KCE402</b>	<b>Introduction To Solid Mechanics</b>	<b>CO1</b>	Describe the concepts and principles of stresses and strains
		<b>CO2</b>	Analyze solid mechanics problems using classical methods and energy methods
		<b>CO3</b>	Analyze structural members subjected to combined stresses
		<b>CO4</b>	Calculate the deflections at any point on a beam subjected to a combination of loads
		<b>CO5</b>	Understand the behavior of columns, springs and cylinders against loads.
<b>KCE403</b>	<b>Hydraulics Engineering &amp; Machines</b>	<b>CO1</b>	Solve problems related to free surface flow in an open channel
		<b>CO2</b>	Apply energy depth relationships for gradually varied flow in steady state conditions
		<b>CO3</b>	Apply the concept of Rapidly Varied Flow in Open Channel Flow in steady state conditions



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		<b>CO4</b>	Explain the working principle, operation, and performance of pumps
		<b>CO5</b>	Summarize the working principle of hydraulic turbines and their characteristics
<b>KCE451</b>	<b>Material Testing Lab</b>	<b>CO1</b>	Determine the quality of bricks, cement, fine aggregate and coarse aggregate and its suitability for construction purpose
		<b>CO2</b>	Design the mix, make the specimens and test the same for the strength for comparison with design strength
		<b>CO3</b>	Develop ability to function as a member of a team to complete the assigned task
<b>KCE452</b>	<b>Solid Mechanics Lab</b>	<b>CO1</b>	Verify the deflection in different structural members by using apparatus
		<b>CO2</b>	Determine the engineering properties of solid Materials
		<b>CO3</b>	Explain the behaviour of beams and columns under different end conditions
<b>KCE453</b>	<b>Hydraulics &amp; Hydraulic Machine Lab</b>	<b>CO1</b>	Investigate flow characteristics and various parameters for open channel
		<b>CO2</b>	Assess the performance of pumps and turbines
<b>KNC402</b>	<b>Python Programming</b>	<b>CO1</b>	Read and write simple Python programs
		<b>CO2</b>	Develop Python programs with conditionals and loops
		<b>CO3</b>	Define Python functions and to use Python data structures – lists, tuples, dictionaries
		<b>CO4</b>	Do input/output with files in Python
		<b>CO5</b>	Do searching, sorting and merging in Python
<b>KNC401</b>	<b>Computer System Security</b>	<b>CO1</b>	Discover software bugs that pose cyber security threats and to explain how to fix the bugs to mitigate such threats
		<b>CO2</b>	Discover cyber-attack scenarios to web browsers and web servers and to explain how to mitigate such threats
		<b>CO3</b>	Discover and explain mobile software bugs posing cyber security threats, explain and recreate exploits, and to explain mitigation techniques
		<b>CO4</b>	Articulate the urgent need for cyber security in critical computer systems, networks, and world wide web, and to explain various threat scenarios
		<b>CO5</b>	Articulate the well-known cyber-attack incidents, explain the attack scenarios, and explain mitigation techniques





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## 3<sup>rd</sup> Year (5<sup>th</sup> Semester)

Course Code	Course Name	<u>Course Outcomes (COs)</u>	
		<i>At the completion of the course, students will be able to:</i>	
KCE501	Geotechnical Engineering	CO1	Classify the soil and determine its Index properties
		CO2	Evaluate permeability and seepage properties of soil
		CO3	Interpret the compaction and consolidation characteristics & effective stress concept of soil
		CO4	Determine the vertical and shear stress under different loading conditions and explain the phenomenon of soil liquefaction.
		CO5	Interpret the earth pressure and related slope failures
KCE502	Structural Analysis	CO1	Explain type of structures and method for their analysis
		CO2	Analyze different types of trusses for member forces
		CO3	Compute slope and deflection in determinate structures using different methods
		CO4	Apply the concept of influence lines and moving loads to compute bending moment and shear force at different sections
		CO5	Analyze determinate arches for different loading conditions
KCE503	Quantity Estimation and Construction Management	CO1	Understand the importance of units of measurement and preliminary estimate for administrative approval of projects
		CO2	Understand the contracts and tender documents in construction projects
		CO3	Analyze and assess the quantity of materials required for civil engineering works as per specifications
		CO4	Evaluate and estimate the cost of expenditure and prepare a detailed rate analysis report
		CO5	Analyze and choose cost effective approach for civil engineering projects
KCE051	Department Elective-I (Concrete Technology)	CO1	Understand the properties of constituent material of concrete
		CO2	Apply admixtures to enhance the properties of concrete
		CO3	Evaluate the strength and durability parameters of concrete
		CO4	Design the concrete mix for various strengths using difference methods
		CO5	Use advanced concrete types in construction industry
KCE055	Department Elective-II (Engineering Hydrology)	CO1	Understand the basic concept of hydrological cycle and its various phases
		CO2	Understand the concept of runoff and apply the knowledge to construct the hydrograph



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		<b>CO3</b>	Apply the various methods to assess the flood
		<b>CO4</b>	Assess the quality of various forms of water and their aquifer properties
		<b>CO5</b>	Understand the well hydraulics and apply ground water modelling techniques
<b>KCE551</b>	<b>CAD Lab</b>	<b>CO1</b>	Understand latest software tools in analysis and design of civil engineering
		<b>CO2</b>	Apply software tools for geotechnical engineering purpose
		<b>CO3</b>	Apply software tools for surveying
<b>KCE552</b>	<b>Geotechnical Engineering Lab</b>	<b>CO1</b>	Determine index properties of soil sample
		<b>CO2</b>	Classify the soils on the basis of standards
		<b>CO3</b>	Determine permeability and compaction characteristics of soil
		<b>CO4</b>	Assess shear strength parameters of soil samples
<b>KCE553</b>	<b>Quantity Estimation and Management Lab</b>	<b>CO1</b>	Estimate the quantities for projects of civil engineering domain
		<b>CO2</b>	Prepare Bill of Quantities (BOQ) for projects undertaken
		<b>CO3</b>	Practice on project management software to manage the projects
		<b>CO4</b>	Have knowledge to study the tender documents
<b>KCE554</b>	<b>Mini Project or Internship Assessment</b>	<b>CO1</b>	Compose project report for a project in civil engineering domain
		<b>CO2</b>	Design a system, component or process to meet desired progress of project
		<b>CO3</b>	Formulate solution to the different civil engineering projects
<b>KNC501</b>	<b>Constitution of India, Law and Engineering</b>	<b>CO1</b>	Identify and explore the basic features and modalities about Indian constitution
		<b>CO2</b>	Differentiate and relate the functioning of Indian parliamentary system at the center and state level
		<b>CO3</b>	Differentiate different aspects of Indian Legal System and its related bodies
		<b>CO4</b>	Discover and apply different laws and regulations related to engineering practices
		<b>CO5</b>	Correlate role of engineers with different organizations and governance models
<b>KNC502</b>	<b>Indian Tradition, Culture and Society</b>	<b>CO1</b>	Understand, connect up and explain basics of Indian Traditional knowledge modern scientific perspective
		<b>CO2</b>	Have basic principles of thought process, reasoning and inference to identify the roots and details of contemporary issues faced by our nation and will try to locate possible solutions to these challenges
		<b>CO3</b>	Understand the importance of our surroundings and encouragement to contribute towards sustainable development





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		<b>CO4</b>	Awareness of holistic life styles of Yogic-science and wisdom capsules in Sanskrit literature that are important in modern society with rapid technological advancements and societal disruptions
		<b>CO5</b>	Knowledge of Indian Knowledge System, Indian perspective of modern scientific world-view and basic principles of Yoga and holistic health care system

### 3<sup>rd</sup> Year (6<sup>th</sup> Semester)

Course Code	Course Name	<u>Course Outcomes (COs)</u>	
		<i>At the completion of the course, students will be able to:</i>	
KCE601	Design of Concrete Structure	<b>CO1</b>	Analyze and Design RCC beams for flexure by IS methods
		<b>CO2</b>	Analyze and Design RCC beams for shear by IS method
		<b>CO3</b>	Analyze and Design RCC slabs and staircase by IS methods
		<b>CO4</b>	Design the RCC compression members by IS methods
		<b>CO5</b>	Design various types of footings and cantilever retaining wall
KCE602	Transportation Engineering	<b>CO1</b>	Understand the history of road development, their alignment & Survey
		<b>CO2</b>	Design the various geometric parameters of road
		<b>CO3</b>	Study the traffic characteristics & design of road intersections & signals
		<b>CO4</b>	Examine the properties of highway materials & their implementation in design of pavements
		<b>CO5</b>	Learn methods to construct various types of roads
KCE603	Environmental Engineering	<b>CO1</b>	Assess water demand and optimal size of water mains
		<b>CO2</b>	Layout the distribution system & assess the capacity of reservoir
		<b>CO3</b>	Investigate physical, chemical & biological parameter of water
		<b>CO4</b>	Design treatment units for water and waste water
		<b>CO5</b>	Apply emerging technologies for treatment of waste water
KCE064	Foundation Design	<b>CO1</b>	Understand various methods of Soil Exploration and its importance
		<b>CO2</b>	Analyze bearing capacity and settlement of soil for shallow foundation
		<b>CO3</b>	Design the various types of shallow foundation and understand the basics of deep foundation



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		<b>CO4</b>	Understand the characteristics of well foundations and retaining wall
		<b>CO5</b>	Understand the concept of soil reinforcement
<b>KOE069</b>	<b>Open Elective -1 (Understanding the Human Being Comprehensively – Human Aspirations and Its Fulfillment)</b>	<b>CO1</b>	Have clarity about human aspirations, goal, activities and purpose of life
		<b>CO2</b>	Understand the harmony in nature/existence and participation of human being in the nature/existence.
		<b>CO3</b>	Understand the human tradition and its various components
		<b>CO4</b>	Understand co-existence with other orders
		<b>CO5</b>	Live with harmony from self to entire existence
<b>KCE651</b>	<b>Transportation Engineering Lab</b>	<b>CO1</b>	Determine properties of aggregates and assess its suitability in construction for transportation infrastructure
		<b>CO2</b>	Determine properties of bitumen and check its suitability for pavement construction
		<b>CO3</b>	Investigate traffic and speed study
		<b>CO4</b>	Determine CBR Value of soil
<b>KCE652</b>	<b>Environmental Engineering Lab</b>	<b>CO1</b>	Measure and compare the physical, chemical and biological properties of water & wastewater
		<b>CO2</b>	Measure the level of air pollution (Particulate Matter) and noise pollution
<b>KCE653</b>	<b>Structural Detailing Lab</b>	<b>CO1</b>	Study of standards for detailing of structural elements
		<b>CO2</b>	Apply software tools for structural drafting and detailing of building components.
		<b>CO3</b>	Create bar bending schedule for structural components of a building
		<b>CO4</b>	Understand full set of structural drawing of a building
<b>KNC601</b>	<b>Constitution of India, Law and Engineering</b>	<b>CO1</b>	Identify and explore the basic features and modalities about Indian constitution
		<b>CO2</b>	Differentiate and relate the functioning of Indian parliamentary system at the center and state level
		<b>CO3</b>	Differentiate different aspects of Indian Legal System and its related bodies
		<b>CO4</b>	Discover and apply different laws and regulations related to engineering practices
		<b>CO5</b>	Correlate role of engineers with different organizations and governance models
<b>KNC602</b>	<b>Indian Traditions, Cultural and Society</b>	<b>CO1</b>	Understand, connect up and explain basics of Indian Traditional knowledge modern scientific perspective
		<b>CO2</b>	Have basic principles of thought process, reasoning and inference to identify the roots and details of contemporary issues faced by our nation and will try to locate possible solutions to these challenges



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		<b>CO3</b>	Understand the importance of our surroundings and encouragement to contribute towards sustainable development
		<b>CO4</b>	Aware of holistic life styles of Yogic-science and wisdom capsules in Sanskrit literature that are important in modern society with rapid technological advancements and societal disruptions
		<b>CO5</b>	Know Indian Knowledge System, Indian perspective of modern scientific world-view and basic principles of Yoga and holistic health care system

### 4<sup>th</sup> Year (7<sup>th</sup> Semester)

Course Code	Course Name	<u>Course Outcomes (COs)</u>	
		<i>At the completion of the course, students will be able to:</i>	
KHU701	<b>Rural Development: Administration and Planning</b>	<b>CO1</b>	Understand the definitions, concepts and components of Rural Development
		<b>CO2</b>	Know the importance, structure, significance, resources of Indian rural economy
		<b>CO3</b>	Have a clear idea about the area development programmes and its impact
		<b>CO4</b>	Acquire knowledge about rural entrepreneurship
		<b>CO5</b>	Understand about the using of different methods for human resource planning
KHU702	<b>Project Management &amp; Entrepreneurship</b>	<b>CO1</b>	Know the need and scope of entrepreneurship
		<b>CO2</b>	Know the entrepreneurial idea and innovation
		<b>CO3</b>	Know the insights of Project Management
		<b>CO4</b>	Know the insights of Project Financing
		<b>CO5</b>	Know the idea and insights of Social Entrepreneurship
KCE070	<b>Railway, Waterway and Airway Engineering</b>	<b>CO1</b>	Explain the importance of railway infrastructure
		<b>CO2</b>	Identify the factors governing design of railway infrastructures
		<b>CO3</b>	Analysis and design the railway track system
		<b>CO4</b>	Understand the concepts of airport engineering and design components of airport
		<b>CO5</b>	Associate with the concepts of water transport system
KCE075	<b>Design of Steel Structures</b>	<b>CO1</b>	Understand properties of steel and types of loads acting on steel structures
		<b>CO2</b>	Design welded and bolted type of connections for elementary steel structures.



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		<b>CO3</b>	Design tension members for elementary steel structures.
		<b>CO4</b>	Design compression members such as simple columns, braced and latticed columns and column bases.
		<b>CO5</b>	Design flexural members such as beams, purlins and girders
<b>KOE074</b>	<b>Open Elective-II (Renewable Energy Resources)</b>	<b>CO1</b>	Understand various non-conventional energy resources
		<b>CO2</b>	Understand solar thermal energy, its' storage for solar heating and cooling
		<b>CO3</b>	Understand Geothermal Energy, its resources & use
		<b>CO4</b>	Details of Thermo-electrical and thermionic Conversions, wind energy
		<b>CO5</b>	Understand Bio-mass, its availability and conversion, ocean thermal energy conversion
<b>KCE751</b>	<b>Concrete Lab</b>	<b>CO1</b>	Understand the standard codes for concrete constituents
		<b>CO2</b>	Evaluate the properties of constituent material of concrete
		<b>CO3</b>	Assess the quality parameters of fresh & hardened concrete
		<b>CO4</b>	Design the concrete mix for desired strength
		<b>CO5</b>	Evaluate strength of concrete using Non-Destructive methods
<b>KCE752</b>	<b>Mini Project or Internship Assessment</b>	<b>CO1</b>	Understand work related to preparation of bill of quantity & tender documents
		<b>CO2</b>	Understand work related to design & drawing of flat slab using IS code method
		<b>CO3</b>	Understand the work related to cost estimation of (including market survey of rates by students) building/earthwork for highway
		<b>CO4</b>	Understand the work related to scheduling of activities of a project using software
		<b>CO5</b>	Understand the work related to preparation of layout plan of a building and its marking on ground
<b>KCE753</b>	<b>Project</b>	<b>CO1</b>	Work effectively as an individual and member of the team to solve complex civil engineering problems
		<b>CO2</b>	Apply engineering knowledge to solve real life problems and involve in self-learning process
		<b>CO3</b>	Apply modern tools for analysis and design of complex engineering problems
		<b>CO4</b>	Develop ethical solutions of engineering problems taking into account its impact on society, environment and sustainability
		<b>CO5</b>	Compose and present detailed project report of his/ her work and defend effectively



# ESHAN COLLEGE OF ENGINEERING

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## 4<sup>th</sup> Year (8<sup>th</sup> Semester)

Course Code	Course Name	<u>Course Outcomes (COs)</u>	
		<i>At the completion of the course, students will be able to:</i>	
KHU801	Rural Development: Administration and Planning	CO1	Understand the definitions, concepts and components of Rural Development
		CO2	Know the importance, structure, significance, resources of Indian rural economy
		CO3	Have a clear idea about the area development programmes and its impact
		CO4	Acquire knowledge about rural entrepreneurship
		CO5	Understand about the using of different methods for human resource planning
KHU802	Project Management & Entrepreneurship	CO1	Know the need and scope of entrepreneurship
		CO2	Know the entrepreneurial idea and innovation
		CO3	Know the insights of Project Management
		CO4	Know the insights of Project Financing
		CO5	Know the idea and insights of Social Entrepreneurship
KOE085	Open Elective-III (Quality Management)	CO1	Know details of Quality Concept, Quality control evaluation
		CO2	Know the insights of quality management
		CO3	Know the details of Control Charts
		CO4	Know the Defects Diagnosis and Prevention
		CO5	Know the detailed standards to maintain quality
KOE094	Open Elective – IV (Digital & Social Media Marketing)	CO1	Understand shifting from traditional marketing practices to digital marketing practices
		CO2	Understand social media marketing and tools
		CO3	Understand the concept of online campaign management
		CO4	Understand digital leadership principles and reputation management
		CO5	Understand security and privatization issues with digital marketing
KCE851	Project	CO1	Work effectively as an individual and member of the team to solve complex civil engineering problems
		CO2	Apply engineering knowledge to solve real life problems and involve in self-learning process
		CO3	Apply modern tools for analysis and design of complex engineering problems



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		<b>CO4</b>	Develop ethical solutions of engineering problems taking into account its impact on society, environment and sustainability
		<b>CO5</b>	Compose and present detailed project report of his/ her work and defend effectively

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