

Civil Engineering**COURSE OUTCOMES****Session 2021-22 ODD SEM****CE 2ND YEAR****Course Name and Code****Technical Communication / KAS-301**

KAS301.1	Define the use of communication in technical and occupational fields.
KAS301.2	To develop the writing skills like report writing, research paper writing, resume writing, etc.
KAS301.3	Enhance confidence to face the diverse audience with presentation skills.
KAS301.4	Apply vast know-how in the application of the learning for technical competence.
KAS301.5	Apply the different dimensions of oral communication & voice dynamics.

Course Name and Code**Maths III / KAS 303**

KAS303.1	Remember the concept of Laplace transform and apply in solving real life problems.
KAS303.2	Understand the concept of Fourier and Z – transform to evaluate engineering problems
KAS303.3	Remember the concept of Formal Logic ,Group and Rings to evaluate real life problems
KAS303.4	Apply the concept of Set, Relation, function and Counting Techniques
KAS303.5	Apply the concept of Lattices and Boolean Algebra to create Logic Gates and Circuits, Truth Table, Boolean Functions, Karnaugh Maps

Course Name and Code**Engg. Mechanics / KCE-301**

KCE301.1	Identify different types of force system, friction force and its applications.
KCE301.2	Apply the concept of centriod, centre of gravity and moment of inertia in different types of problems

KCE301.3	Analysing forces in statically determinate structures like truss system	
KCE301.4	Apply the understanding of particle dynamics and work energy	
KCE301.5	Describe the kinetics of rigid body and virtual work energy method	
Course Name and Code		Surveying and Geomatics / KCE-302
KCE302.1	Define basics of surveying and work with survey instruments.	
KCE302.2	Explain Layout of horizontal and vertical curves.	
KCE302.3	Demonstrate total station and GPS.	
KCE302.4	Apply principles of photogrammetric for surveying.	
KCE302.5	Apply Principles of Remote Sensing and Digital Image Processing and uses for Civil Engineering problems.	
Course Name and Code		Fluid Mechanics/KCE-303
KCE303.1	Identify the broad principles of fluid statics	
KCE303.2	Identify definitions of the basic terms used in fluid mechanics	
KCE303.3	Identify classifications of fluid flow	
KCE303.4	Apply the continuity, momentum and energy principles	
KCE303.5	Apply dimensional analysis	
Course Name and Code		Computer System Security/KNC-301
KNC301.1	Examine software bugs that pose cyber security threats	
KNC301.2	Detect cyber attack scenarios to web browsers and web servers and to explain how to mitigate such threats	
KNC301.3	Inspect mobile software bugs posing cyber security threats, explain and recreate exploits, and to explain mitigation techniques.	
KNC301.4	Articulate the urgent need for cyber security in critical computer systems, networks, and world wide web, and to explain various threat scenarios	
KNC301.5	Identify cyber attack incidents, attack scenarios and mitigation techniques.	

Course Name and Code		Building Planning & Drawing Lab / KCE-351
KCE351.1	Ability to Execute the commands used in Auto CAD.	
KCE351.2	Ability to identify all the components of a building.	
KCE351.3	Ability to design the plan of residential building as per requirement.	
Course Name and Code		Surveying and Geomatics Lab/KCE-352
KCE352.1	Understanding the different methods and techniques of surveying	
KCE352.2	Inferring Tacheometry for surveying in difficult and hilly areas to obtain the topographical map	
KCE352.3	Identifying survey instruments in carrying out survey, collect data, write reports and able to perform required calculations.	
KCE352.4	Identifying and controlling the accumulation of errors in projects.	
Course Name and Code		Fluid Mechanics Lab/ KCE-353
KCE353.1	Verify the momentum equation using the experimental set-up on impact of jet	
KCE353.2	Collect and analyze data using fluid mechanics principles and experimentation methods.	
KCE353.3	Recognising the transition from laminar to turbulent flow and to determine the lower Critical Reynolds number.	
KCE353.4	Calibrate an orifice meter, venturimeter, and bend meter and Recognising the variation of the co-efficient of discharge with the Reynolds number	
Course Name and Code		Mini Project or Internship Assessment / KCE-354
KCE354.1	List important properties of building materials.	

KCE354.2	Demonstrate the experiments related to bricks, cement.
KCE354.3	Knowledge of the survey work.
CE 3RD YEAR	
Course Name and Code	Geotechnical Engineering / KCE-501
KCE501.1	Classifies the soil and determines its Index properties.
KCE501.2	Hydraulic behaviour of soil.
KCE501.3	Interpret the compaction and consolidation characteristics & effective stress concept of soil.
KCE501.4	Determine the vertical and shear stress under different loading conditions and explain the phenomenon of soil liquefaction related slope failures..
KCE501.5	Interpret the earth pressure and related slope failures
Course Name and Code	Quantity estimation and construction management/ KCE-503
KCE503.1	Apply various method to estimate the quantity of building structure
KCE503.2	Calculate rate analyses and discuss tender contract document.
KCE503.3	Analyse different project management technique.
KCE503.4	List various equipment use in construction management.
KCE503.5	Analyse to implementing various technique to calculate project cost.
Course Name and Code	Structural Analysis / KCE-502
KCE502.1	Identify the types of structures and method for their analysis.
KCE502.2	Compute the different types of trusses for member forces.
KCE502.3	Examine the slope and deflection in determinate structures using different methods

KCE502.4	Outline the concept of influence lines and moving loads to compute bending moment and shear force at different sections.
KCE502.5	Inspect the determinate arches for different loading conditions.
Course Name and Code	Concrete Technology / KCE-051
KCE051.1	Classifying the properties of constituent material of concrete.
KCE051.2	Apply admixtures to enhance the properties of concrete.
KCE051.3	Determine the strength and durability parameters of concrete.
KCE051.4	Apply the difference methods for concrete mix of various strengths.
KCE051.5	Describe the Uses of types of advanced concrete in construction industry.
Course Name and Code	Engineering Hydrology / KCE-055
KCE055.1	discuss the basic concept of hydrology cycle and various phases.
KCE055.2	classification the concept of runoff and apply the knowledge to construct the hydrograph.
KCE055.3	Examine the various method to assess the flood.
KCE055.4	Assess the quality of various forms of water and their aquifer properties.
KCE055.5	Explaining the well hydraulics and apply ground water.
Course Name and Code	Constitution of India, Law and Engineering / KNC-501
KNC501.1	Identify and explore the basic features and modalities about Indian constitution
KNC501.2	Compare and relate the functioning of Indian parliamentary system at the centre and state level.
KNC501.3	Compare different aspects of Indian Legal System and its related bodies.
KNC501.4	Apply different Intellectual Property laws and regulations related to engineering practices.

KNC501.5	Outline the role of engineers with different organizations and governance models.	
Course Name and Code		CAD Lab / KCE - 551
KCE551.1	List all important commands for drawing a plan.	
KCE551.2	Infer the suitable tools for 2-D plans.	
KCE551.3	Design a plan as per the requirements of space and time.	
Course Name and Code		Geotechnical Engineering Lab / KCE - 552
KCE552.1	Understand the importance of index properties of soil.	
KCE552.2	Ability to find out the density of soil .	
KCE552.3	Determine the grain size distribution curve and consistence limits.	
KCE552.4	Understand the compaction characteristics of soil.	
KCE552.5	Capability to analyse and solving the variety of problems in foundation design.	
Course Name and Code		Quantity Estimation and Management Lab / KCE - 553
KCE553.1	Verify the CPWD specification and DSR Study	
KCE553.2	Solve the building estimation and calculate the quantity of it.	
KCE553.3	Collect the data and make the bill of the estimation	
Course Name and Code		Mini Project or Internship Assessment / KCE - 554
KCE554 .1	Understand the basic construction activities	
KCE554 .2	Remember and apply the learned concepts of materials.	

KCE554 .3	Learning the developments in area of civil engineering.
CE 4TH YEAR	
Course Name and Code	Railway, Waterway and Airway Engineering / KCE - 070
KCE070.1	Summarizing the importance of railway infrastructure.
KCE070.2	Inferring the factors governing design of railway infrastructures.
KCE070.3	Identifying and illustrating design the railway track system.
KCE070.4	Understand the concepts of airport engineering and design components of airport.
KCE070.5	Associate with the concepts of water transport system.
Course Name and Code	Design of Steel Structures / KCE - 075
KCE075.1	Identified properties of steel and types of loads acting on steel structures.
KCE075.2	To Analyse and design bolted and welded connection
KCE075.3	Ability to analyse and design tension member for elementary steel structures
KCE075.4	To Analyse and design of simple columns, braced and latticed columns and column bases.
KCE075.5	Ability to design of flexural members.
Course Name and Code	RENEWABLE ENERGY RESOURCES / KOE - 074
KOE074.1	Describe the Need, importance and scope of non conventional and alternate energy resources.
KOE074.2	outline the role significance of solar thermal energy.
KOE074.3	Identify the utilization of geothermal energy and magneto hydro dynamics energy resources
KOE074.4	Define the concept of Wind energy and its importance.
KOE074.5	Outline the various energy sources such as bio gas and ocean thermal energy in the Energy Generation.

Course Name and Code		Rural Development: Administration and Planning / KHU - 701
KHU701.1	Paraphrase the definitions, concepts and components of Rural Development.	
KHU701.2	Interprete the importance, structure, significance, resources of Indian rural economy.	
KHU701.3	Outline the village development programmes and its impact.	
KHU701.4	inferring the rural entrepreneurship with women empowerment.	
KHU701.5	Adapt different methods for human resource planning.	
Course Name and Code		Concrete Lab / KCE - 751
KCE751.1	identify the functional role of ingredients of concrete.	
KCE751.2	apply mix design philosophy.	
KCE751.3	Analyze the test of concrete under various conditions	
KCE751.4	outline the non destructive testing on concrete	
Course Name and Code		Mini Project or Internship Assessment / KCE - 752
KCE752.1	Interprate the working method at real projects.	
KCE752.2	Application of the learned concepts of materials and structure for real project work.	
KCE752.3	Learning the new developments in area of civil engineering.	
Course Name and Code		Project / KCE-753
KCE753.1	execute soil stabilization method.	
KCE753.2	examine the concrete strength by replacement of various ingredients.	

KCE753.3	Implement flexible pavement at site.
KCE753.4	Experiment water treatment plant for college campus.

Civil Engineering**COURSE OUTCOMES****Session 2021-22 EVEN SEM****CE 2ND YEAR**

Course Name and Code	BASIC DATA STRUCTURES AND ALGORITHMS / KOE045
KOE045.1	Describe how arrays, linked lists, stacks, queues, trees, and graphs are represented in memory, used by the algorithms and their common applications.
KOE045.2	Discuss the computational efficiency of the sorting and searching algorithms.
KOE045.3	Implementation of Trees and Graphs and perform various operations on these data structure.
KOE045.4	Understanding the concept of recursion, application of recursion and its implementation and removal of recursion.
KOE045.5	Identify the alternative implementations of data structures with respect to its performance to solve a real world problem.
Course Name and Code	Universal Human Values / KVE401
KVE401.1	This will help in understanding the essential complementarity between Values and Skills to ensure sustainable happiness and prosperity, which are the core aspirations of all human beings.
KVE401.2	to develop Focus what really is conducive to human happiness.
KVE401.3	To develop understanding and responsibility with the entire all four level of living (Myself, Family,Society as well as with nature).
KVE401.4	To facilitate the development of a holistic perspective among students towards life, profession and happiness, based on a correct understanding of human reality and the rest of existence. Such a holistic perspective forms the basis of value based living in natural way.
KVE401.5	To highlight plausible implications of such a holistic understanding in terms of ethical human conduct, trustful and mutually satisfying human behaviour and mutually enriching interaction with nature.

Course Name and Code	Introduction to Solid Mechanics/KCE402
KCE402.1	Use the concept of stress and strain under different conditions of loading and determine the principal stresses and strains in structural members
KCE402.2	Determine the stresses and strains in the members subjected to axial, bending and torsional loads
KCE402.3	Apply the concept of stress and strain in solving problems related to springs and column to calculate the slope, deflection and buckling
KCE402.4	Apply the concept of stress and strain to determine different stresses in pressure vessels
KCE402.5	Determine the stresses developed in straight and curved beams of symmetrical and unsymmetrical cross sections.
Course Name and Code	Hydraulic Engineering and Machines / KCE403
KCE403.1	Knowledge of fluid mechanics and apply this to solve the problems in open channel flow.
KCE403.2	Knowledge of specific energy and specific energy curve in channel section.
KCE403.3	Understanding the uniform flow, gradually varied flow, and rapidly varied flow in steady condition.
KCE403.4	Knowledge of working of hydrolic machine like pumps.
KCE403.5	Understanding the details of turbines.
Course Name and Code	Materials, Testing & Construction Practices/KCE401
KCE401.1	Identify various building materials and to understand their basic properties
KCE401.2	Understand the use of non-conventional civil engineering materials.
KCE401.3	Study suitable type of flooring and roofing in the construction process.
KCE401.4	Characterize the concept of plastering, pointing and various other building services.

KCE401.5	Exemplify the various fire protection, sound and thermal insulation techniques, maintenance and repair of buildings.
Course Name and Code	Python Programming/KNC402
KNC402.1	To read and write simple Python programs.
KNC402.2	To develop Python programs with conditionals and loops.
KNC402.3	To define Python functions and to use Python data structures -- lists, tuples, dictionaries
KNC402.4	To do input/output with files in Python
KNC402.5	To do searching ,sorting and merging in Python
Course Name and Code	Material Testing Lab / KCE451
KCE351.1	Examine the various properties of cement.
KCE351.2	Examine the properties of coarse and fine aggregates.
KCE351.3	Examine the water absorption and compressive strength of bricks.
Course Name and Code	Solid Mechanics Lab/KCE452
KCE352.1	To determine the tension test on Mild Steel
KCE352.2	To determine the Hardness Test (Brinell's and Rockwell) of different metal
KCE352.3	To determine the Impact test (Charpy and IZOD)
Course Name and Code	Hydraulics & Hydraulic Machine Lab/ KCE-453
KCE-453.1	Determine Manning coefficient & the velocity distribution in an open channel.

KCE-453.2	Analyse experimentally the study of flow characteristics over a hump & the study of flow characteristics through a horizontal contraction in a rectangular channel.
KCE-453.3	Analyse experimentally flow characteristics of a free hydraulic jump & study characteristics of pumps and turbines

CE 3RD YEAR

Course Name and Code	GIS & REMOTE SENSING / KOE066
KOE066.1	Understand about the principles of Remote Sensing and its advantages and limitations.
KOE066.2	Retrieve the information content of remotely sensed data.
KOE066.3	Apply problem specific remote sensing data for engineering applications.
KOE066.4	Analyze spatial and attribute data for solving spatial problems.
KOE066.5	Create GIS and cartographic outputs for presentation
Course Name and Code	INDIAN TRADITION, CULTURE AND SOCIETY/ KNC 602
KNC602.1	The course attempts to transmit fundamental concepts in cognition, reasoning, and inference to help students understand the causes and specifics of our country's problems.
KNC602.2	To help the Students comprehend the value of our surroundings and their role in sustainable development.
KNC602.3	To educate student on topics relating to "Indian" culture, tradition, and its multifaceted nature
KNC602.4	To introduce students to holistic lifestyles found in Sanskrit literature and yogic science, which are crucial in today's age of social upheaval and rapid technological growth
KNC602.5	To familiarise students with the Indian Knowledge System, the Indian viewpoint on current science, the fundamentals of yoga, and the holistic health care system.

Course Name and Code	DESIGN OF CONCRETE STRUCTURE/ KCE601
KCE601.1	To Analyse and Design RCC beams for flexure by IS methods.
KCE601.2	Analyse and Design RCC beams for shear by IS methods.
KCE601.3	Analyse and Design RCC slabs and staircase by IS methods.
KCE601.4	Design the RCC compression members by IS methods.
KCE601.5	Design various types of footings and cantilever retaining wall.
Course Name and Code	TRANSPORTATION ENGINEERING / KCE-602
KCE602.1	Ability to design geometric elements of highways
KCE602.2	Understanding the applicability of various aspects of traffic engineering
KCE602.3	Ability to deesign rotary intersections, grade separated intersections and signals
KCE602.4	understanding the role of transportation and history of road development in the country.
KCE602.5	Apply the various road constructions methods adpoted.
Course Name and Code	ENVIRONMENTAL ENGINEERING /KCE603
KCE603.1	Ability to investigate physical, chemical & biological parameter of water
KCE603.2	Interprate the various methods for popluation forecasting.
KCE603.3	Ability to design the water treatment unit for certain population.
KCE603.4	Ability to implement the various waste dispossal methods.
KCE603.5	Ability to design the Layout of water distribution system.

Course Name and Code	FOUNDATION ENGINEERING / KCE064
KCE064.1	Interprate the various foundation methods.
KCE064.2	Ability to design the pile foundation.
KCE064.3	Understaning of pricipicles of fricton piling.
KCE064.4	Ability to compute the bearing capacity of soil.
KCE064.5	Understanding of thge methos to prevent thge settlemnt of soil.
Course Name and Code	TRANSPORTATION ENGG. LAB/ KCE - 651
KCE651.1	Examination of crushing value & impact value of aggregates.
KCE651.2	Performing the tests of penetration value of bitumen.
KCE651.3	Compute the determination of softening point of bitumin.
Course Name and Code	ENVIRONMENTAL ENGG. LAB / KCE - 652
KCE652.1	Ability to determine the BOD, COD of water sample.
KCE652.2	Ability to compute the pH, alkalinity and hardness of water sample.
KCE652.3	Ability to determine the kjeldahl nitrogen, fluoride present in water sample.
Course Name and Code	STRUCTURAL DETAILING LAB / KCE - 653
KCE653.1	Preparing the Engineering drawing for simply supported one and two way slab of buildings.
KCE653.2	Preparation of Engineering drawing for isolated footings and combined footings of Reinforced Cement Columns.
KCE653.3	Preparation of Engineering drawing for simply supported and cantilever Reinforced Cement beams.

CE 4TH YEAR

Course Name and Code	QUALITY MANAGEMENT / KOE-085
KOE085.1	To understand the concept of Quality.
KOE085.2	To understand the Implication of Quality on Business.
KOE085.3	To Implement Quality Implementation Programs.
KOE085.4	To have exposure to challenges in Quality Improvement Programs.
KOE085.5	Identify requirements of quality improvement programs
Course Name and Code	DIGITAL AND SOCIAL MEDIA MARKETING /KOE-094
KOE094.1	Identify core concepts of digital marketing and the role of digital marketing in business.
KOE094.2	Understand how they can use Face book, Twitter, Google +, LinkedIn, YouTube, Instagram and Pinterest for digital marketing.
KOE094.3	Understanding of Analytics Tools for report extraction and campaign measurement.
KOE094.4	Understand how they can use digital marketing to increase sales and grow their business.
KOE094.5	Understanding of the opportunities for deploying emerging digital marketing media and techniques.
Course Name and Code	PROJECT MANAGEMENT & ENTREPRENEURSHIP / KHU-802
KHU802.1	Interpret the concept of entrepreneurship.
KHU802.2	Ability to evaluate the entrepreneurial ideas and innovation.
KHU802.3	Ability to interpret the terms of project management along with application in real life projects.
KHU802.4	Interpret the project financing along with cost estimation.
KHU802.5	Interpret the social entrepreneurship with legal framework.

Course Name and Code	Project / KCE-851
KCE851.1	Ability to design the slolutions of real world problems.
KCE851.2	Ability to apply the interpret the dwarings involved in constuction work.
KCE851.3	Learning the skills of team management and apply them in actual Site working.