



ESWAR COLLEGE OF ENGINEERING

(Approved by AICTE, & Affiliated to JNTUK, A.P.)

KESANUPALLI (V), NARASARAOPETA-522549, AP

www.eswarcollegeofengg.org, email:eswarcollegeofengg@gmail.com

2.6.1 – Programme Outcomes and Course Outcomes for all Programmes offered by the institution are stated and displayed on the website and communicated to teachers and students



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The Outcome based Education is followed in the teaching learning process. The objectives of the Outcome Based Education (OBE) emphasizes on outcomes like, Program Outcomes (POs), Program Specific Outcomes (PSOs) and Course Outcomes (COs). The Outcomes are derived by involving all the relevant stakeholders at the department level offering the concerned program. After a consensus is arrived at, the objectives are publicized through

- Curriculum /regulations books
- Class rooms
- Department Notice Boards
- Laboratories
- Student Induction Programs
- Meetings/ Interactions with employers
- Parent meet
- Faculty meetings
- Alumni meetings
- Library

While addressing the students at the Induction Program the HODs create awareness on POs, PSOs. During the course of study, the concerned faculty throws light on the outcome of the course (COs).

Program specific outcomes (PSOs) are derived based on the specific skill sets of faculty who are available as strength to the department and associated industrial conclave if any. At the end of the program, the students are also assessed to analyse the requirements and accomplishments to be fulfilled at the micro level.

Program Outcomes (POs) are statements with a wider scope that describe the professional accomplishments that the program aims at. POs incorporate many areas of inter-related knowledge, skills and personality traits that are to be acquired by the students during their graduation, and the students need to accomplish these by the time they complete the program.

Course outcomes (COs) describe the essential and enduring disciplinary knowledge, abilities that students should possess and the subject knowledge that should be required upon completion of a course. They are clearly specified and communicated. The faculty who teaches that particular course prepares the Course Outcomes. After this, they are discussed in the concerned department's BOS meeting course-wise and finally approved.



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Course Outcomes

A.Y:2023-2024

Year/Sem: III B.Tech I SEM

Course Name: Structural Analysis	
Course Code: CE3101	
CE3101.1	Differentiate the between the determinate and indeterminate structures
CE3101.2	Analyse behaviour of structures due to the expected loads, including the moving loads, acting on the structure
CE3101.3	Classify the bending moment and shear forces in beams for different fixity conditions
CE3101.4	Understand the continuous beams using various methods
CE3101.5	Determination of three moment method, slope deflection method, energy theorems
CE3101.6	Able to know the influence line diagrams for various types of moving loads on beams/bridges

Course Name: Design and Drawing of Reinforced Concrete Structures	
Course Code: CE3102	
CE3102.1	Able to understand the various design methods in RCC
CE3102.2	Differentiate the over and under reinforced structures with loading
CE3102.3	Analysis and design of flexural members and detailing
CE3102.4	Classification of various types slabs in RCC
CE3102.5	Design different type of compression members and footings
CE3102.6	Understand different types of footings and design

Course Name: Geotechnical engineering -I	
Course Code: CE3103	
CE3103.1	Able to know the definition of the various quantities related to soil mechanics and Establish their inter-relationships.
CE3103.2	Determination of the various index properties of the soils and classify the soils
CE3103.3	Understand the importance of the different engineering properties of the soil
CE3103.4	Classify the properties of compaction, permeability, consolidation and shear strength and determine them in the laboratory
CE3103.5	understand the concept of shear strength of soils
CE3103.6	Differentiate the shear parameters of sands and clays and the areas of their application

Course Name: Environmental Management	
Course Code: CE3104	
CE3104.1	Understand the Plan and design the water and wastewater systems
CE3104.2	Analyse the he source of emissions and select proper control systems
CE3104.3	Able to know the Design & estimation of water supply system for a city
CE3104.4	knowledge about various environmental aspects



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CE3104.5	Apply the suitable treatment flow for raw water treatments
CE3104.6	Differentiate the importance of Water and Wastewater Treatment Plant and supply system

Course Name: Construction Technology & Management	
Course Code: CE3105	
CE3105.1	Analyse the importance of construction planning
CE3105.2	Define the functioning of various earth moving equipment
CE3105.3	Able to know the methods of production of aggregate products and concreting
CE3105.4	Apply the gained knowledge to project management and construction techniques
CE3105.5	Classify the importance of safety in construction projects
CE3105.6	Understand the concept of project management including network drawing and monitoring

Course Name: Survey Camp lab (Field Work-II)	
Course Code: CE3106	
CE3106.1	Determination Horizontal and Vertical Angles by the method of repetition method by theodolite
CE3106.2	Define the distance between two inaccessible points
CE3106.3	Able to know the curve setting method
CE3106.4	Apply the total station method to know the distance between two inaccessible points
CE3106.5	Analyse the Contouring maps
CE3106.6	Understand the Heights and distance problems using tachometric principles

Course Name: Geotechnical Engineering Lab	
Course Code: CE3107	
CE3107.1	Able to know the permeability of soils
CE3107.2	Understand the Compaction, Consolidation and shear strength characteristics
CE3107.3	Analyse the index properties of the soils
CE3107.4	Differentiate the various types and classifications of the soils
CE3107.5	Apply Atterberg's Limits to know plasticity of soils
CE3107.6	Differentiate the Permeability, Compaction, consolidation, shear strength parameters & CBR value



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Year/Sem: III B.Tech II SEM

Course Name: Design And Drawing of Steel Structures	
Course Code: CE3201	
CE3201.1	Understand the various Work relevant IS codes
CE3201.2	Analysis and design of flexural members and detailing
CE3201.3	Able to Design compression members of different types with connection detailing
CE3201.4	Understand Design of tension and compression members in trusses
CE3201.5	Differentiate the Plate girder and Gantry Girder and their Design
CE3201.6	Apply the drawings pertaining to different components of steel structures

Course Name: Water Resource Engineering	
Course Code: CE3202	
CE3202.1	Able to understanding of the theories and principles governing the hydrologic processes
CE3202.2	Analyse the quantify hydrological components
CE3202.3	Apply concepts in hydrologic design of water resources projects
CE3202.4	Define Intensity-Duration-Frequency and Depth-Area Duration curves to design hydraulic structures
CE3202.5	Differentiate flow mass curve and flow duration curve
CE3202.6	Develop unit hydrograph and synthetic hydrograph

Course Name: Geotechnical Engineering-II	
Course Code: CE3203	
CE3203.1	Able to understand the various types of shallow foundations
CE3203.2	Analyse and compute the magnitude of foundation settlement and decide on the size of the foundation accordingly
CE3203.3	Define the field test data and arrive at the bearing capacity
CE3203.4	Design the principles of bearing capacity of piles
CE3203.5	Differentiate the principles of important field tests such as SPT and Plate bearing test
CE3203.6	Able to know the concepts of pile foundations and determine their load carrying capacity

Course Name: Advanced Structural Analysis	
Course Code: CE3204	
CE3204.1	Differentiate Determinate and Indeterminate Structures
CE3204.2	Able to understand the Carryout lateral Load analysis of structures



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CE3204.3	Analyse Cable and Suspension Bridge structures
CE3204.4	Apply Moment Distribution, Kani's Method and Matrix methods
CE3204.5	Define the elastic curves on the structures
CE3204.6	Classify the shear force and bending moment diagrams

Course Name: Remote Sensing & GIS	
Course Code: CE3205	
CE3205.1	Understand the basic principles of Remote Sensing and GIS techniques
CE3205.2	Able to learn various types of sensors and platforms
CE3205.3	Differentiate the aerial photographs and satellite imageries
CE3205.4	Create and input spatial data for GIS application
CE3205.5	Apply RS and GIS concepts for application in Civil Engineering
CE3205.6	Classify the spatial data structures, raster and vector data formats

Course Name: Estimation , Costing and Contracts Lab	
Course Code: CE3206	
CE3206.1	Able to determine the quantities of different components of buildings
CE3206.2	Understand the quantity calculations of different components of the buildings
CE3206.3	Define the position to find the cost of various building components
CE3206.4	Applying the Conditions of contract, Valuation of buildings
CE3206.5	Able to know the capable of finalizing the value of structures
CE3206.6	Differentiate single, double and four roomed buildings by Detailed Estimation of Buildings using individual wall method

Course Name: Remote Sensing & GIS Lab	
Course Code: CE3207	
CE3207.1	Able to understand the Work comfortably on GIS software
CE3207.2	Define Digitize and create thematic map and extract important features
CE3207.3	Classifying the Develop digital elevation model
CE3207.4	Differentiate the Interpretation and Estimation of features from satellite
CE3207.5	Analyse and Modelling using GIS software
CE3207.6	Apply GIS software to simple problems in water resources, transportation engineering and Agriculture

Course Name: Civil Engineering Practice Lab	
Course Code: CE3208	
CE3208.1	Able to know practical aspects of Civil Engineering profession to the students
CE3208.2	Define various design and construction procedures of Civil Engineering projects
CE3208.3	Applying important codes and by-laws that will benefit young professionals
CE3208.4	Classify Important case studies of Civil Engineering including buildings, bridges
CE3208.5	Analyse Environmental impacts, Safety rules for construction, Energy consumption, Sustainability and recycling practices, Optimization and costing
CE3208.6	Differentiate the retrofitting buildings and models



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Year/Sem: IV B.Tech I SEM

Course Name: Advanced Structural Analysis	
Course Code: CE4101	
CE4101.1	Differentiate Determinate and Indeterminate Structures
CE4101.2	Able to understand the Carryout lateral Load analysis of structures
CE4101.3	Analyse Cable and Suspension Bridge structures
CE4101.4	Apply Moment Distribution, Kani's Method and Matrix methods
CE4101.5	Define the elastic curves on the structures
CE4101.6	Classify the shear force and bending moment diagrams

Course Name: Ground Improvement Techniques	
Course Code: CE4102	
CE4102.1	Able to possess the knowledge of various methods of ground improvement and their suitability
CE4102.2	Differentiate to learn the concepts, purpose and effects of grouting
CE4102.3	Understand the position to design a reinforced earth embankment and check its Stability
CE4102.4	Classify the various functions of Geosynthetics and their applications in Civil Engineering practice
CE4102.5	Able to know reinforced earth technology and soil nailing can obviate the problems posed by the conventional retaining walls
CE4102.6	Defining the improvement of engineering performance of soils

Course Name: Earth & Rock fill Dams	
Course Code: CE4103	
CE4103.1	Able to design earth and rock fill dams
CE4103.2	Understand and get familiarity with slope stability calculations
CE4103.3	Classify the prevention techniques for slope failures
CE4103.4	Differentiate the Failures, Damages and Protection of Earth Dams
CE4103.5	Define total stress analysis versus effective Stress analysis
CE4103.6	Able to know Suitability of materials for earth and rock fill dams



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Course Name: OPERATIONS MANAGEMENT	
Course Code : CE4104	
CE4104.1	Apply appropriate forecasting techniques & Aggregate planning methods
CE4104.2	Learn Materials management analysis and scheduling policies
CE4104.3	Learn about the inventory control techniques, MRP and contemporary management techniques.
CE4104.4	Apply quality management principles proposed by Taguchi, Juran & Demigs
CE4104.5	Apply optimization to LP model & transportation.
CE4104.6	Apply optimization to assignment problems

Course Name: Ground Water Hydrology , Wells & Pumps	
Course Code: CE4105	
CE4105.1	Able to know principles of ground water resources development, different acquaintance and their principles
CE4105.2	Define the types of aquifers and their properties
CE4105.3	Understand knowledge on theory of open well hydraulics and drilling methods
CE4105.4	Imparting the artificial ground water recharge classification of indigenous pumps, solar pumps, wind mill pumps
CE4105.5	Differentiate the types pumps and their properties
CE4105.6	Apply High lift pumps, mixed flow pumps and vertical turbine pump sets

Course Name: UNIVERSAL HUMAN VALUES : UNDERSTANDING HARMONY	
Course Code: CE4106	
CE4106.1	Able to become more aware of themselves, and their surroundings (family, society, nature)
CE4106.2	Able to know the responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
CE4106.3	Describe better critical ability. They would also become sensitive to their commitment towards
CE4106.4	Able to understand (human values, human relationship and human society).
CE4106.5	Able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.
CE4106.6	Desirable to follow it up by a) faculty-student or mentor-mentee programs throughout their time with the institution b) Higher level courses on human values in every aspect of living. E.g. as a professional



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Course Name: Skill Advanced Course Lab	
Course Code: CE4107	
CE4107.1	Introducing the important codes and by-laws that will benefit young professionals
CE4107.2	Introducing practical knowledge in planning of smart city
CE4107.3	Equipping students with the professional knowledge in the design and construction procedures of various Civil Engineering projects
CE4107.4	Introducing the Knowledge about the existing cities including roads and metros
CE4107.5	Able to know the town planning and elevation
CE4107.6	Understand the project scheduling