

SIR C R REDDY COLLEGE OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING
COURSE OUT COMES
ANDHRA UNIVERSITY

English	CE1101.1	Apply The Four Languages Learning Skills-Listening, Speaking, Reading, Writing (Lsrw) For Professional Success.
	CE1101.2	Employ Knowledge Of Grammatical Structures And Vocabulary In Speech And Writing
	CE1101.3	Apply Effective Communication Skills To Enhance Professional Possibilities.
	CE1101.4	Develop Acceptable Personality Traits Suitable For Chosen Profession.
Mathematics-I	CE1102.1	Apply The Partial Differentiation Techniqueto Solve Certain Problem Arise In Engineering.
	CE1102.2	Solve The Differential Equations Of First Order And First Degree Related To Various Engineering Applications.
	CE1102.3	Solve The Linear Higher Order Differential Equations With Constant Coefficients.
	CE1102.4	Examine The Nature,Interval Of Convergence Of Infinite Series.
Mathematics-II	CE1103.1	Solve System Of Linear Simultaneous Equations Of Various Matrix Methods.
	CE1103.2	Apply Eigen Value Computation Techniques To Reduce A Given Quadratic To Canonical Form
	CE1103.3	Apply Laplace Transforms Functions For Solving Ordinary Differential Equations.
	CE1103.4	Apply Special Functions To Evaluate Improper Integrals.
Chemistry	CE1104.1	Select The Methods Used For Purification Of Water For Domestic And Industrial Purposes
	CE1104.2	Identify The Advantages And Limitations Of Plastics, Building Materials And Their Use In Day To Day Life
	CE1104.3	Select The Suitable Methods Of Corrosion Control.
	CE1104.4	Identify The Fuels Which Are Commonly Used And Their Economics, Advantages And Limitations
	CE1104.5	Obtain The Knowledge Of Semiconductors, Super Conductors And Liquid Crystals
Computer Programming and Numerical Methods	CE1105.1	Identify Appropriate C Language Constructs To Solve Problems
	CE1105.2	Understand The Concepts Of Homogeneous Data Types To Solve Different Problems
	CE1105.3	Apply The Concepts Of Function Modules, Its Usage And Memory Allocation Using Pointers
	CE1105.4	Understand The Concepts Of Heterogeneous Data Types And File Handling Feature In C
	CE1105.5	Solve System Of Linear Algebraic Equations And Apply Newton'S Forward & Backward Interpolation For Equal Intervals, Langranges'S Formulae For Unequal Intervals
	CE1105.6	Describe The Concept Of Numerical Integration And Numerical Solutions Of Differential Equations
History of Science & Technology	CE1106.1	Understand About The Scientific History Of India, A Particular Period'S Of Indian Cultural Habitats And The How To Improvements Of Science And Tech.
	CE1106.2	Understand About Policy Resolution Statements Of India, And Csir Activities
	CE1106.3	Understand The Applications Bio-Technology & Its Applications Like Dna Finger Printing, Cloning, Tissue culture
	CE1106.4	Understand About The Indian Defense Research And Their Imp. & Ocean Development And Biological Resources, & Research Institutions.

	CE1106.5	Understand About The Indian Satellites, Launch Vehicle Technology, Types Of Satellites Etc., Technology Transfer And Fore Casting
Mathematics-III	CE1201.1	Apply The Concept Of Lines, Planes, Spheres And The Students Are Through In Defining And Evaluating
	CE1201.2	SGoelovme eDtoriuc bFleig Aurned. Triple Integrals To Find Areas And Volumes.
	CE1201.3	Apply Special Functions To Evaluate Improper Integrals.
	CE1201.4	Compute Fourier Seriesfor Different Function And Also Half Range Series Certain Types Of Functions.
Engineering Physics	CE1202.1	Explain The Laws Of Thermodynamics, Efficiency Of Heat Engine And Their Importance In Engineering.
	CE1202.2	Study The Importance Of Maxwell Equations In Electromagnetic Fields.
	CE1202.3	Identify Various Optical Phenomena And Their Importance In Engineering.
	CE1202.4	Understand The Working Of Lasers & Its Propagation Through Optical Fibers And Importance Of Ultrasonic
Engg Graphics	CE1203.1	Draw Basic Components Of Engineering Drawing Viz Geometric Constructions, Curves Etc.
	CE1203.2	Construct Scales: Plain, Diagnol And Vernier
	CE1203.3	Draw Orthographic Projections Of Points, Lines And Solids As Per The International Standards.
	CE1203.4	Draw Sectional Drawings And Developments As Per National And International Standards.
Ethics and Moral Values	CE1204.1	Understand The Values In Education And Real Ife
	CE1204.2	Understand The Values In Respective Professions And Analyze The Ethical Role Of Engineers
	CE1204.3	Understand The Concept Of Harmony In Life And Moral Responsibility Of Engineers
	CE1204.4	Understand Environmental Ethics And Apply In Real Life
Geology	CE1205.1	Identify and classify the geological minerals
	CE1205.2	Measure the rock strengths of various rocks
	CE1205.3	Classify, monitor and measure the Landslides and subsidence
	CE1205.4	Prepares, analyses and interpret the Engineering Geologic maps
	CE1205.5	Test the geological material and ground to check the suitability of civil engineering project construction.
	CE1205.6	Investigate the project site for mega/mini civil engineering projects. Site selection for mega engineering projects like Dams, Tunnels, disposal sites etc...
Mechanics of solids	CE2102.1	Identify different types of stresses and strains.
	CE2102.2	To draw shear force and bending moment diagrams.
	CE2102.3	Evaluate the shear stresses in beams.
	CE2102.4	Calculate the deflections of a beam by using different methods
	CE2102.5	Estimate the combined stresses due to torsion and bending for circular shafts & concept of thin cylinders and thick cylinders.
	CE2102.6	Evaluate the carrying capacity of columns.
Building Materials & Construction	CE2103.1	Identify the use of different construction materials.
	CE2103.2	Analyze the different types of foundations.
	CE2103.3	Analyze the different types of masonry works.

	CE2103.4	Students can able to identify the building components
	CE2103.5	Prepare mix design by using IS code and identify various types of concretes.
Surveying-I	CE2104.1	To demonstrate the basic surveying skills.
	CE2104.2	To use various surveying instruments.
	CE2104.3	To perform different methods of surveying.
	CE2104.4	To integrate the knowledge and produce topographical maps using leveling and contouring.
Fluid Mechanics-I	CE2105.1	Determine the properties of fluids, fluid pressure and their measurement
	CE2105.2	Compute forces on immersed plane, curved surfaces and floating bodies
	CE2105.3	Apply the continuity equation and energy equation in solving problems on flow through pipes
	CE2105.4	Compute the frictional losses in flow through pipes
	CE2105.5	Compute the discharge through fluid measurement systems such as mouth pieces, orifices, notches, and weirs.
Environmental Studies	CE2106.1	The natural resources and their importance for the sustenance of the life and recognize the need to conserve the natural resources
	CE2106.2	The biodiversity of India and the threats to biodiversity, and conservation practices to protect the biodiversity
	CE2106.3	Various attributes of the pollution and their impacts and measures to reduce or control the pollution along with waste management practices
	CE2106.4	The environmental legislations of India and the first global initiatives towards sustainable development.
	CE2106.5	About environmental assessment and the stages involved in EIA and the environmental audit.
Engineering Mechanics	CE2107.1	Work with forces and its resolution in different planes problems on resultant of force system.
	CE2107.2	Determine the equations of equilibrium and students can draw free body diagram.
	CE2107.3	Analyze the determinate trusses; And the centroid and find the Moment of inertia.
	CE2107.4	Analyze system of forces that include frictional forces.
	CE2107.5	Analyze the problems on kinematics and kinetics and can apply on basic civil engineering.
Structural Analysis-I	CE2201.1	Have knowledge of deflection of beams.
	CE2201.2	Bending moment and shear force in fixed beams and continuous beams due to various loading conditions.
	CE2201.3	Analyze the continuous beams using the important method of slope deflection and moment distribution.
	CE2201.4	Analyze the loads in beams, Pratt and Warren trusses when loads of different types and spans ware passing over the truss.
	CE2201.5	Assess stresses across section of the thin and thick cylinders to arrive at optimum sections to withstand the internal pressure.
Surveying-II	CE2203.1	Measure horizontal and vertical angles in surveying.
	CE2203.2	Apply concepts of tachometry.
	CE2203.3	Set out a curve.
	CE2203.4	Know the basic concepts of total station.
	CE2203.5	Understand the concepts of modern surveying and advancements like GPS & GIS, etc.
Building Planning & Design	CE2204.1	Students should be able to plan various buildings as per the buildings by-laws.
	CE2204.2	The student should be able to distinguish the relation between the plan, elevation & cross section & identify the form & functions

		among the buildings.
	CE2204.3	The student is expected to learn the skills of drawing elements & plan the buildings as per requirements.
Fluid Mechanics-II	CE2205.1	Analyse the fluid flow in open channels.
	CE2205.2	Design the most economical open channels.
	CE2205.3	Analyse the turbulent flow in rough pipes.
	CE2205.4	Explain the various methods available to control the boundary layer separation
	CE2205.5	Analyse the effects of lift and drag.
Environmental Engineering-I	CE2206.1	Plan and design the water and distribution network and sewerage systems.
	CE2206.2	Identify the suitable water source and select proper intake structure.
	CE2206.3	Analyze and characterize different properties of water.
	CE2206.4	Select the appropriate appurtenances in the water supply.
	CE2206.5	Design suitable treatment flow for raw water treatments.
Structural Analysis-II	CE3101.1	Differentiate determinate and indeterminate structures.
	CE3101.2	Analyze the indeterminate trusses.
	CE3101.3	Analyze the arches, cables and suspension bridge structures..
	CE3101.4	Analyze the structures using moment distribution, Kani's method and matrix methods.
Steel Structures – I	CE3102.1	Work with relevant IS codes (IS: 800-2007) .
	CE3102.2	Carryout analysis and design of flexural members.
	CE3102.3	Design tension and compression members of different types with suitable connections.
	CE3102.4	Design different types of foundations and Column Bases with suitable connections.
	CE3102.5	Design the trusses and purlins as per IS code (IS: 875
Water Resources Engineering-I	CE3103.1	Draw the hydrological cycle and its components.
	CE3103.2	Develop unit hydrograph based on the stream flow data and conduct unit hydrograph analysis.
	CE3103.3	Asses the movement of ground water beneath the earth.
	CE3103.4	Design of the reservoir capacity and able to understanding the basic principles of flood routing method.
	CE3103.5	Identify the importance of irrigation systems and its applications.
	CE3103.6	Design the irrigation canals by Kennedy's and lacey's theory.
Geotechnical Engineering – I	CE3104.1	The student will know the definition of the various quantities relatedto soil mechanics and establish their inter-relationships.
	CE3104.2	The student can perform different methods of determination ofthe various index properties of the soils and classify the soils.
	CE3104.3	The student will know the importance of the different engineering properties of the soil such as compaction, permeability, consolidation and shear strength and determine them in the laboratory.
	CE3104.4	The student can apply the above concepts in day-to-daycivil engineering practice.
Environmental Engineering -II	CE3105.1	Plan and design the sewerage systems
	CE3105.2	Characterize the nature of Sewage

	CE3105.3	Select the appropriate appurtenances in the sewerage systems
	CE3105.4	Select a suitable treatment method for sewage
	CE3105.5	Identify the critical point of pollution in a river for a specific amount of pollutant disposal into the river
Advanced Concrete Technology	CE3106.1	Tests the concrete & assess the quality of concrete.
	CE3106.2	Asses the durability of concrete
	CE3106.3	To identifies the role of ingredients of concrete in its production and behavior.
	CE3106.4	Design the concrete mix by IS, ACI & BS method.
	CE3106.5	To asses the importance of special concretes and its applications in various fields.
Reinforced Concrete Structures – II	CE3201.1	To learn design of retaining walls.
	CE3201.2	To learn design of piles and pile caps.
	CE3201.3	To learn the design of different types of water tanks.
	CE3201.4	To learn the components of bridges and design of bridges.
	CE3201.5	To learn the basic concepts of prestressed concrete.
Steel Structures – II	CE3202.1	Design components of plate girder as per IS code. (IS: 875).
	CE3202.2	Design the Bridge components as per IS code (IS: 875).
	CE3202.3	Analyze the Beams and Frames by plastic analysis.
	CE3202.4	Design the water tank as per IS code (IS: 3370).
Geotechnical Engineering – II	CE3203.1	Understand the need of sub soil exploration.
	CE3203.2	Calculate the bearing capacity of the soils.
	CE3203.3	Adopt the suitable foundation for different soils.
	CE3203.4	Understand the concept of caissons.
	CE3203.5	Analyze the slopes to attain the stability.
	CE3203.6	Calculate the earth pressures.
Fluid Mechanics – III	CE3204.1	Apply the similarity laws to predict the performance of prototype form the data obtained by tests on models.
	CE3204.2	Calculate the forces exerted by fluid jet on vanes of different shapes, either stationary or moving.
	CE3204.3	Distinguish between various types of turbines & their working principles.
	CE3204.4	Select the suitable pump based on the requirement criteria.
	CE3204.5	Draw the performance curves for various hydraulic machines.
Transportation Engineering-I	CE3205.1	The student can successfully plan highway network for a given area.
	CE3205.2	The student can determine the highway alignment and design highway geometrics.
	CE3205.3	The student successfully designs the Intersections and prepares traffic management plans.
	CE3205.4	The student can judge the suitability of pavement materials, design and construction flexible and rigid pavements.
	CE3205.5	The student can have the complete knowledge of Airport Engineering.
Solid Waste Management	CE3206.1	To know the source and types of solid wastes

	CE3206.2	To know about 3 R'S concept i.e. Reuse, Recycle, Reduce
	CE3206.3	Describe the collection systems of solid waste of a town
	CE3206.4	Design treatment process of municipal solid waste the landfill.
	CE3206.5	To characterize the solid waste and design a composting facility.
Estimating and Quantity Surveying	CE4101.1	Explain the concept of estimating and types of estimates.
	CE4101.2	Calculate the quantities of various (components) items of buildings.
	CE4101.3	Estimate the quantity of earth work, components of roads, culverts & bridges.
	CE4101.4	Work out rate analysis for various items of work.
	CE4101.5	Develop the specifications for different Civil Engineering works.
	CE4101.6	Prepare contract documents for tenders and valuation of buildings.
Transportation Engineering-II	CE4102.1	Plan, design, construct and maintain a railway track.
	CE4102.2	Plan, design, construct and maintain docks and harbours.
	CE4102.3	Plan, design, construct and maintain tunnels.
Project Planning and Management	CE4103.1	Design PERT and CPM networks for construction projects.
	CE4103.2	Perform cost analysis and resource scheduling.
	CE4103.3	Manage construction projects.
Water Resources Engineering- II	CE4104.1	Different types of dams in India and their functions.
	CE4104.2	Analyze the gravity dams and earth dams subjected to various forces acting on them.
	CE4104.3	Design of spillways and diversion head works.
	CE4104.4	Various types of Cross drainage works and components of river training works.
	CE4104.5	Hydropower development in India and components of hydropower stations.
Traffic Engg & Management	CE4105.1	Have the knowledge on traffic characteristics
	CE4105.2	Perform different traffic studies and surveys
	CE4105.3	Analyze the traffic data
	CE4105.4	Design the efficient traffic network
	CE4105.5	Adopt the suitable traffic management technique
Air Pollution & Control	CE4106.1	The Concepts of air pollution.
	CE4106.2	The Concepts of plume behavior, meteorological conditions
	CE4106.3	How to estimate the quantity of air pollutant.
	CE4106.4	Be able to develop control technologies.