AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER

Department of Civil Engineering

Course Outcomes

Third Year- 2012 Course			
Semester - I			
Course Code	**Course Name**	**Course Outcomes**	
At the end of the course, the learners will be able to			
301001	**Hydrology and water resource engineering**	CO1	To summarize about Hydrologic cycle, Precipitation, Infiltration and methods of Stream gauging.
		CO2	Describe irrigation, its method, water requirement, crop planning and calculate canal capacity.
		CO3	Explain ground water hydrology and determine hydraulics and specific capacity of well.
		CO4	Analyze flood by hydrographs and learn factors affecting runoff.
		CO5	Investigation of reservoir planning and decide of reservoir capacity.
		CO6	Understand water management , Water logging and drainage
301002	**Infrastructure Engineering and Construction Techniques**	CO1	Explain different aspects of infrastructure projects
		CO2	Understand various terms related with railway engineering
		CO3	Identify suitable construction techniques in Civil Engineering
		CO4	Understand terms related to tunnel and construction methods of tunneling
		CO5	Explain the details of docks and harbors.
		CO6	Recommend suitable construction equipment required during construction activity.
301003	**Structural Design - I**	CO1	Understand the various design philosophies' required to design the STEEL structures, apply relevant IS provisions to ensure safety and serviceability.
		CO2	Identify the modes of failure using LSM and evaluate moment of resistance for Various sections.
		CO3	Analysis and design of Slab and Column bases

		CO4	Design of flexural member using various supported and Unsupported Conditions
		CO5	Apply the concepts to analysis and design of Plate Girder
		CO6	Analysis and design of roof truss and Gantry Girder.
301004	**Structural Analysis II**	CO1	Compute the structural forces and kinematics indeterminacy by using slope-deflection method
		CO2	Calculate the structural indeterminate end moments of beams and rigid jointed frames by using moment distribution iterative method of structural analysis.
		CO3	Learn the concept of force technique through flexibility method and its use for determining the structural unknown forces.
		CO4	Understand the concept of displacement method through stiffness structural techniques for indeterminate structures under static loads.
		CO5	Comprehend the concept finite difference method of structural analysis and approximate methods of structural analysis.
		CO6	Get knowledge of advance finite element method of detailed structural analysis, which normally used for computer programming.
301005	**Fluid Mechanics II**	CO1	Understand and make the use of lift force, drag force and rise in pressure due to water hammer for solving problems of fluid flow.
		CO2	Derive the basic governing equations and depth energy relationship of open channel flow and its application for practical problems.
		CO3	Understand and make the use of Chezy's and Manning's formulae for uniform flow computation and application of momentum equation for analysis of hydraulic jump in rectangular channel.
		CO4	Apply the momentum principle to find out work done by impact of jet and impeller of centrifugal pump.
		CO5	Understand the concept of hydro power plant and design of Pelton wheel turbine and analyze performance of hydraulic turbines.
		CO6	Derive the basic equation of GVF; Understand the classification of channel bed slopes, various GVF profiles and computation of GVF profiles by various methods.
301006	**Employability Skill Development**	CO1	Understand Employability Skills for career planning
		CO2	Apply the interpersonal skills to solve problems using acquired knowledge, facts and techniques in a different way
		CO3	Develop Presentation and writing skill to deliver the topic effectively with clarity and impact.
		CO4	Understand aspect of Communication Skills

		CO5	Built the Commercial Awareness and Professional etiquettes amongst the students to handle civil engineering businesses
		CO6	Develop Personal skill and its application for overall development of students
Semester - II			
301007	**Advance Surveying**	CO1	Demonstrate the knowledge of geodetic surveying to Establish the three dimensional position.
		CO2	Understand handling and use of various survey instruments for hydrographic survey
		CO3	Evaluate the elevations of inaccessible points and study of Setting out works.
		CO4	Apply theory of errors for correction of measurements and determine the MPV's of observations.
		CO5	Analyze the arial photographic images and Determine the topography of the area.
		CO6	Use remote sensing and geographical information system for solving civil engineering problems.
301008	**Project Management and Engineering Economics**	CO1	Understand the various concepts of Project Management.
		CO2	Learn, understand and apply project planning and scheduling techniques for various activities involved in project.
		CO3	Plan for schedule of activities in construction project and resource allocation plan and study various means of monitoring projects
		CO4	Understanding financial & economic terms associated with projects.
		CO5	Planning for material management, EOQ and optimum Equipment's required on site based on concepts of fleet management
		CO6	Apply the technique of social cost-benefit analysis that is used in project appraisal & Evaluate investment in projects
301009	**Foundation Engineering**	CO1	Understand purpose & planning and to select suitable methods of subsurface investigations for foundation under different situation.
		CO2	Calculate the bearing capacity of soil for shallow foundation.
		CO3	Estimate immediate settlement and consolidation settlement of foundation.
		CO4	Understand different types of deep foundations and to determine capacity of single pile and group of pile.
		CO5	Understand construction of different types of cofferdams and engineering problems associated with black cotton soil & methods to overcome them.

		CO6	Explain ground improvement techniques and to understand the liquefaction of soil.
301010	**Structural Design - II**	CO1	Understand the various design philosophies' required to design the reinforced concrete structures, apply relevant IS provisions to ensure safety and serviceability.
		CO2	Identify the modes of failure using LSM and evaluate moment of resistance for singly, doubly reinforced and flanged sections.
		CO3	Analysis and design of slab and staircase using different Support Conditions.
		CO4	Design of flexural member using various types of support conditions.
		CO5	Apply the concepts of shear, bond, torsion and design the beam using IS Code coefficients/ Redistribution methods.
		CO6	Analysis and design of reinforced concrete columns and isolated column footing.
301011	**Environmental Engineering I**	CO1	Understand various aspects of noise pollution, air pollution
		CO2	Explain the components related to water supply schemes, water demands.
		CO3	Apply working principle to design aerator and sedimentation tank.
		CO4	Apply working principle to design clarri-floculator and sand filters.
		CO5	Compare the various miscellaneous water treatment as per requirement.
		CO6	Recommend proper water distribution network and rain water harvesting technique.
301012	**Seminar**	CO1	Study the literature to understand the new technology
		CO2	To identify promising new directions of civil engineering technologies.
		CO3	To apply various literature survey methods
		CO4	To import skills in preparing detailed report.
		CO5	To improve presentation skills
		CO6	To understand the correlation between theory and practice.