

AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER

Department of Civil Engineering

Course Outcomes

| Third Year- 2015 Course | | | |
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| 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 design compression and tension members for various sections. |
| | | CO3 | Analyse and design the slab and column bases. |
| | | CO4 | Design the flexural member using various supported and unsupported conditions |

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| | | CO5 | Apply the concepts to analyse and design of Plate girder |
| | | CO6 | Analyse and design the roof truss and Gantry girder. |
| 301004 | Structural Analysis II | CO1 | To compute the structural forces and kinematics indeterminacy by using slope-deflection method |
| | | CO2 | To calculate the structural indeterminate end moments of beams and rigid jointed frames by using moment distribution iterative method of structural analysis. |
| | | CO3 | To learn the concept of force technique through flexibility method and its use for determining the structural unknown forces. |
| | | CO4 | To understand the concept of displacement method through stiffness structural techniques for indeterminate structures under static loads. |
| | | CO5 | To comprehend the concept finite difference method of structural analysis and approximate methods of structural analysis. |
| | | CO6 | To 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 |

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| | | 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 working principles of various instruments for hydrographic survey |
| | | CO3 | Use remote sensing and geographical information system for solving civil engineering problems. |
| | | CO4 | Apply theory of errors for correction in measurements and determine the most probable values. |
| | | CO5 | Analyze the aerial photographic images and Determine the topography of the area. |
| | | CO6 | Evaluate the elevations of inaccessible points and setting out works. |
| 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 | Planning for material management, EOQ and optimum Equipment's required on site based on concepts of fleet management |
| | | CO4 | Plan for schedule of activities in construction project and resource allocation plan and study various means of monitoring projects |
| | | CO5 | Understanding financial & economic terms associated with projects. |
| | | CO6 | Apply the technique of social cost-benefit analysis that is used in project appraisal & Evaluate investment in projects |
| 301009 | Foundation Engineering | CO1 | To understand purpose & planning and to select suitable methods of subsurface investigations for foundation under different situation |
| | | CO2 | To calculate the bearing capacity of soil for shallow foundation |
| | | CO3 | To estimate immediate settlement and consolidation settlement of foundation |
| | | CO4 | To understand different types of deep foundations and to determine capacity of single pile and group of pile. |
| | | CO5 | To understand construction of different types of cofferdams and engineering problems associated with black cotton soil & methods to overcome them. |
| | | CO6 | To explain ground improvement techniques and to understand the liquefaction of soil. |

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| 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 and municipal solid waste management. |
| | | CO2 | Explain the components related to water supply schemes, water demands and quality parameters. |
| | | CO3 | Explain working principle and design of aerator and sedimentation tank. |
| | | CO4 | Explain working principle and design of 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. |