



CAYMET's
Siddhant College of Engineering
Savitribai Phule Pune University, Pune
Third Year Civil Engineering (2015 Course)

COURSE OBJECTIVE & OUTCOMES

SEM I

Subject Code & Name - 301002 Hydrology and Water Resources Engg. Course Objectives

Course Objectives

1. To provide knowledge in the hydrological cycle, precipitation, evapotranspiration, infiltration and its measurements
2. To understand the physics of translate of rainfall into runoff modelling of various runoff techniques
3. To estimate the runoff
4. To develop ability to apply the analytical and numerical techniques to ground and surface water models
5. To understand hydrographs and IUH

Course Outcomes

On completion of the course, the students will be able to:

1. Demonstrate the concepts of hydrograph, S-hydrograph, Unit hydrograph and IUH
2. Estimate the hydrological parameters
3. Carry out statistical and probability analysis of hydrological data
4. Demonstrate the concepts of hydrological systems
5. Develop regression models for the analysis of hydrological data

Subject Code & Name – 301003 Structural Design I

Course Objectives

1. To learn IS 800-2007 code of practice for the design of Compression, Tension and Flexural members using various cross-sections
2. To study the behaviour and design of compression and tension members using simple and built-up sections
3. To understand behaviour of flexural members and the design laterally restrained and unrestrained beams
4. To study the components of truss, loads on trusses, analysis and design of purlins and truss members
5. To study the design of bolted and welded connections and arranging field visit to industries

Course Outcomes

On completion of the course, the students will be able to:

1. Apply the IS code of practice for the design of steel structural elements
2. Design compression and tension members using simple and built-up sections
3. Calculate forces on the various members of the truss and design them
4. Analyze the behavior of bolted connections and design them
5. Design welded connections for both axial and eccentric forces

Subject Code &Name – 301004 Structural Analysis II

Course Objectives

1. To understand the influence line concepts for indeterminate structures
2. To understand the methods of analysis of intermediate trusses for external loads, lack of fit and thermal effect
3. To study behavior of arches and their methods of analysis
4. To know the concept and analysis of cable stayed bridge
5. To study the multi storey frames subjected to gravity loads and lateral loads

Course Outcomes

1. On completion of the course, the students will be able to:
2. Demonstrate the concepts of qualitative influence line diagram for continuous beams and frames
3. Apply the methods of indeterminate truss analysis
4. Demonstrate the behavior of arches and their methods of analysis
5. Analyze cable suspension bridges
6. Analyze multistory frames subjected to gravity loads and lateral loads

Subject Code &Name – 301005 Fluid Mechanics-II

Course Objectives

1. To classify the types of flows in open channel and also to design open channel sections in a most economical fashion with minimum wetted perimeter and learn about critical flows
2. To study about non uniform flows in open channel and longitudinal slopes in open channel and also to learn about the characteristics of hydraulic jump
3. To develop an understanding of fluid flow patterns and learns to use boundary layer theory and drag
4. To provide insights to the open channel hydraulics and introduce dimensional analysis for fluid flow problems

5. To study in detail about boundary layers theory

Course Outcomes

On completion of the course, the students will be able to:

1. Visualize fluid flow phenomena observed in Civil Engineering systems such as flow in a pipe, flow measurement through orifices, mouth pieces, notches and weirs
2. Analyze fluid flows in open channel hydraulics and devices such as weirs and flumes
3. Apply dimensional analysis and the concept of CFD design open channels for most economical sections like rectangular, trapezoidal and circular sections.
4. Measure velocity through instruments in open channel and pipe flow

SEM II

Subject Code &Name -301007 Advanced Surveying

Course Objectives

1. To understand the basics and elements of different types of curves on roads and their preliminary survey
2. To learn about surveying applications in setting out of curves, buildings, culverts and tunnels
3. To get introduced to different geodetic methods of survey such as triangulation, trigonometric leveling
4. To learn about errors in measurements and their adjustments in a traverse
5. To get introduced to modern advanced surveying techniques involved such as Remote sensing, Total station, GPS, Photogrammetry etc.

Course Outcomes

On completion of the course, the students will be able to:

1. Set out curves, buildings, culverts and tunnels
2. Carry out a geodetic survey, taking accurate measurements using instruments and adjusting the traverse
3. Apply mathematical adjustment of accidental errors involved in surveying measurements
4. Plan a survey for applications such as road alignment and height of the building
5. Invoke advanced surveying techniques over conventional methods in the field of civil engineering

Subject Code &Name -301008 Project Management and Engineering

Economics

Course Objectives

1. To enrich the students with the concepts and applications of Management
2. To make the learners understand the basic functions of Financial Management
3. To facilitate the students with the fundamental concepts of Technology management
4. To enhance the understanding of Project Management techniques
5. To impart the importance of Human Resources in the organizational context

Course Outcomes

1. On completion of the course, the students will be able to:
2. Demonstrate the nuances of management functions
3. Analyze the framework of a business organization
4. Adopt an empirical approach toward business situations
5. Apply various Project Management techniques
6. Implement roles of team players

Subject Code & Name -301009 Foundation Engineering

Course Objectives

1. To explain the analysis of sheet pile wall under different support conditions
2. To explain overall stability analysis of well foundation
3. To explain fundamentals of soil dynamics and its application to machine foundation analysis including code provisions
4. To explain problems related to expansive soils and solution to overcome
5. To explain the concept of slope stability analysis for various slope conditions including graphical methods

Course Outcomes

On completion of the course, the students will be able to:

1. Analyze and design any kind of sheet pile wall system including coffer dam
2. Analyze and design well foundation including complete stability analysis
3. Estimate soil parameters under dynamic conditions including machine foundations
4. Design a suitable foundation system for any kind of problematic soils
5. Analyze the stability of any kind of slope by using both theoretical and graphical methods

Subject Code & Name -301010 Structural Design –II

Course Objectives

1. To study the stress strain behavior of steel and concrete
2. To understand the concept of working stress and limit state methods
3. To gain the knowledge of limit state design for flexure, shear, torsion, bond and anchorage
4. To understand the behavior of columns subjected to eccentric load and use of interaction diagrams
5. To study the design of various foundation

Course Outcomes

Student shall be able to

1. Apply the fundamental concepts of working stress method as per IS 456-2000 and Prestressed concrete method.
2. Apply the fundamental concepts of limit state method on limit state of Serviceability
3. Apply the fundamental concepts of limit state of collapse in flexure and in Shear & Bond as per IS 456-2000.
4. Apply the fundamental concepts of limit state of collapse in Compression and design of footing as per IS 456-2000.

5. Solve the design of circular rectangular water tank.
6. Design of one –way, cantilever slabs, continuous and two way slab

Subject Code &Name -301011 Environmental Engineering-I

Course Objectives

1. To make the students conversant with sources and its demand of water
2. To understand the basic characteristics of water and its determination
3. To expose the students to understand the design of water supply lines
4. To provide adequate knowledge about the water treatment processes and its design
5. To have adequate knowledge on operation and maintenance of water supply

Course Outcomes

1. On completion of the course, the students will be able to:
2. Identify the source of water and water demand
3. Apply the water treatment concept and methods
4. Apply water distribution processes and operation and maintenance of water supply
5. Prepare basic process designs of water and wastewater treatment plants collect, reduce, analyze, and evaluate basic water quality data
