

**Savitribai Phule Pune University, Pune**

**Second Year Civil Engineering (2015 Course)**

**Course Objectives BE - 2015 Pattern.**

**401 001- Environmental Engineering –II**

**Course Outcomes:**

1. Select and design appropriate wastewater treatment unit processes.
2. Calculate design specifications for unit processes to treat wastewater of a particular quality to a particular standard.
3. Demonstrate proficiency in a range of standard wastewater laboratory analytical methods.
4. Interpret the relevance of these in relation to environmental regulations.
5. Learn how to characterize wastewater for physical, chemical and microbiological treatment of wastewater

**401002-Transportation Engineering BE Civil**

**Course Outcomes:**

1. Understand the role of road transportation and Classification, traffic flow models
2. Apply basic science Highway alignment ,Geometric design and traffic engineering
3. Understand basic properties of sub-grade and performance characteristics and design
4. Understand the characteristics and scientific planning of airports
5. Understand the classification of bridge and types of bridge
6. Design and study of component part of bridges

**401 003- Structural Design and Drawing**

**Course Outcomes:**

1. Students able to understand different PSC members and different losses in PSC.
2. Students able to design PSC girder members.
3. Students able to design PT Slab
4. Able to design earth retaining structures and draw detailing.
5. Able to Design liquid retaining RCC structures of different shapes and detailing.
6. Students able to design Water and Seismic load resist building and Base shear analysis.

## **401 004-Elective-I Architecture and Town Planning**

### **Course Outcomes**

1. Principles and elements of Architectural Composition
2. Urban renewal for quality of life and livability
3. Goals and Objectives of planning
4. Different types of planning in town.
5. Legislative mechanism for town planning.
6. Application of special tools in planning.

## **401 005-TQM & MIS in Civil Engineering**

### **Course Outcomes:**

1. Understand what is Quality and interpretation. Quality as challenges.
2. Introduction of Management Information systems (MIS) Overview
3. Use of Mathematical tools in TQM prevent and rectify defects.
4. To Understand Difference between, quality control, quality assurance, total quality control and total quality management (TQM).
5. To Understand MIS structure based on management activity whether for Operational control, management control or strategic planning.
6. To Development of an MIS for a construction organization associated with building works, study and use of various modules of ERP software for construction.

## **401 006-Project**

### **Course Outcomes:**

1. Able to understand what is research and type of research
2. Able to understand to develop appropriate methodology for research.
3. Able to prepare prototype of research work
4. Able to understand result and discussion of research work
5. Able to identify the gaps and future scope of work
6. Able to understand use of software in research work for development product

## **401 007- Dams & Hydraulic Structures BE Civil**

### **Course Outcomes:** Student will be able to understand

1. History of dam, different terms of dam and classification of dam, Dam safety and instrumentation of dam.
2. Components and design of gravity dam, Concept and types of arch dam
3. Spillway ,types of spillway & Importance of Hydropower structures
4. Introduction of earth dam and diversion head works.
5. Canal and canal structures.

## **401008-Quantity Surveying contracts and Tenders BE Civil**

### **Course Outcomes:**

1. Students will be able to identify the meaning of important terms in estimating and importance of approximate estimate.
2. Students will be able to take out quantities of various items of works from drawings, make abstract of the same.
3. Students will be able to draft suitable specifications to meet expectations of client and prepare a rate analysis of various items of works.
4. Students will be able to choose suitable method of valuation of property and assess the value of a property.
  5. Students will be able to execute works in PWD & prepare documents required for a tender
6. Students will be able to identify various facts of contract including its meaning, validity, the conditions of contract, measures to solve disputes law of contract etc.

## **401 009-Elective-III Air Pollution and control**

### **Course Outcomes:**

1. Ability to distinguish between various methods of air pollution analysis.
2. To understand air pollution sampling and measurement.
3. Give recent statistics and control strategy of indoor air pollution
4. Theory and development of pollution control devices such as Cyclone, electrostatic particle precipitator, packed towers, gravitational separator, bag house, etc.
5. After attending the course the students shall have acquired knowledge and understanding to evaluate air quality management and analyze the causes and effects of air pollution.
6. Students would be able to understand the type and nature of air pollutants, the behavior of plumes and relevant meteorological determinants influencing the dispersion of air pollutants.

## **401 010- Construction Management**

### **Course Outcomes:**

1. Understand the roles and responsibilities of a project manager
2. Prepare schedule of activities in a construction project
3. Prepare tender and contract document for a construction project
4. Understand safety practices in construction industry
5. Identify the equipment used in construction
6. Understand use of software in construction industry