

BharatiVidyapeeth's college of Engineering Lavale
Department of civil Engineering

Program outcomes of Civil Engineering

PO-1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and engg. Specialization to the solution of complex engineering problems.
PO-2	Problem analysis: Identify, formulate, research literature, and analyze engineering problems to arrive at substantiated conclusions using first principles of mathematics, natural, and engineering sciences.
PO-3	Design/development of solutions: Design solutions for complex engineering problems and design system components, processes to meet the specifications with consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO-4	Conduct investigations of complex problems: Use research-based knowledge including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO-5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations
PO-6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO-7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
PO-8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO-9	Individual and team work: Function effectively as an individual, and as a member or leader in teams, and in multidisciplinary settings.
PO-10	Communication: Communicate effectively with the engineering community and with society at large. Be able to comprehend and write effective reports documentation. Make effective presentations, and give and receive clear instructions.
PO-11	Project management and finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team. Manage projects in multidisciplinary environments
PO-12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Architecture & Town Planning

Course Objective

1. To make the student understand the process of planning of town and byelaws of 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

Dams & Hydraulic Structures

Course Objective: To make the student understand the history of dam, types of dam, instrumentation of dam, components of dam and hydropower.

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.

Quantity Surveying contracts and Tenders

Course Objectives:

1. Able to understand the different materials
2. Able to understand the estimation and valuation of materials
3. Methods of estimation and valuation
4. Able to understand rate analysis
5. Able to prepare tender quotation documentation

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.

Air Pollution & Control

Course Objectives:

1. To assess air pollution: sources and effects.
2. To assess sources and classification of air pollutants.
3. Introduction of major problems in indoor air pollution and control, regulations Outcomes.
4. Familiar with regulations pertinent to air pollutions.
5. Describe general air pollution problems, meteorological definitions, air transport equations and pollution control matters and devices.
6. Students would get an insight into the dispersion of air pollution in the atmosphere.

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.

Transportation Engineering

Course Objective:

1. To provide basic knowledge of transportation Engineering
2. students can understand and be able to solve transportation related problems and design for highways component parts
3. To provide basic knowledge of airport planning and design

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

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

Course Objective:

1. To Understand role and responsibility of project manager
2. To prepare planning and scheduling of project
3. To use of modern equipments in Construction site

Total Quality Management & Management Information System

Course Objectives:

1. To study importance of Quality for project management
2. To use of management of data using software
3. To Development of MIS in Construction Industry

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.

Environmental Engineering –II

Course Objectives:

1. The effects of wastewater discharges on the aquatic environment with an appreciation of the environmental impacts of wastewater management.
2. The fundamental scientific concepts with a detailed technical understanding of the technologies required for domestic and industrial wastewater treatment.
3. The principles involved in the design and selection of appropriate unit processes.

4. To apply knowledge of mathematics, physics, chemistry, and microbiology to solve and analyze engineering problems related to wastewater collection, transport, quality and treatment.

5. To use the fundamental principles of mass balance, chemical kinetics and equilibrium to design wastewater treatment units to achieve a desirable treatment goal.

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