



Vision Buldhana Educational & Welfare Society's,

**PANKAJ LADDHAD INSTITUTE OF TECHNOLOGY AND
MANAGEMENT STUDIES, BULDHANA**

ChikhliRoad ,Yelgaon, Buldhana-443002 (M.S) INDIA www.plit.ac.in email:plitprincipal@gmail.com

Approved by AICTE New Delhi. Recognized by DTE(M.S),Affiliated to SantGadge Baba Amravati University ,Amravati ISO 9001:2015 Certified

Programme Outcome of B.E.



PO1:Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3:Design development of solutions: Design solutions for complex components or processes that meet the specified needs with appropriate consideration for the public health and safety and the cultural societal and environmental consideration.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design experiments, analysis and interpretation of data and synthesis of the information to provide valid conclusions.

PO5: 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.

PO6: 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.

PO7: 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.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: 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.



Vision Buldhana Educational & Welfare Society's,

**PANKAJ LADDHAD INSTITUTE OF TECHNOLOGY AND
MANAGEMENT STUDIES, BULDHANA**

ChikhliRoad ,Yelgaon, Buldhana-443002 (M.S) INDIA www.plit.ac.in email:plitprincipal@gmail.com

Approved by AICTE New Delhi. Recognized by DTE(M.S),Affiliated to SantGadge Baba Amravati University ,Amravati ISO 9001:2015 Certified

Programme Specific
Outcomes
And
Course Outcomes
B.E. (Civil)



Vision Buldhana Educational & Welfare Society's,

**PANKAJ LADDHAD INSTITUTE OF TECHNOLOGY AND
MANAGEMENT STUDIES, BULDHANA**

ChikhliRoad ,Yelgaon, Buldhana-443002 (M.S) INDIA www.plit.ac.in email:plitprincipal@gmail.com

Approved by AICTE New Delhi. Recognized by DTE(M.S),Affiliated to SantGadge Baba Amravati University ,Amravati ISO 9001:2015 Certified

Department of Civil Engineering

Program Specific Outcomes

1. Analyze, design, construct, operate and maintain the civil engineering projects.
2. Judge the environmental impact of different projects and take disciplinary measures to control environmental deterioration.
3. Make the use of latest soft ware's concerning to various streams of civil engineering.



**Vision Buldhana Educational & Welfare Society's,
PANKAJ LADDHAD INSTITUTE OF TECHNOLOGY AND
MANAGEMENT STUDIES, BULDHANA**

ChikhliRoad ,Yelgaon, Buldhana-443002 (M.S) INDIA www.plit.ac.in email:plitprincipal@gmail.com

Approved by AICTE New Delhi. Recognized by DTE(M.S),Affiliated to SantGadge Baba Amravati University ,Amravati ISO 9001:2015 Certified

Department of Civil Engineering

Course Outcomes

Sr.No.	Course code Course name	Course outcome	
Civil Engineering Sem III			
1	Course Code: (3CE01) Course: Engineering Mathematics- III	Demonstrate the knowledge of differential equations and partial differential equations, applied to electrical engineering systems.	
		Apply Laplace transform to solve differential equations.	
		Demonstrate the use of Partial Differential Equations.	
		Compute different Numerical Methods.	
		Apply the knowledge of Complex Analysis.	
2	Course Code: (3CE02) Course: Strength of Materials	Demonstrate the basic concepts of probability and statistics.	
		To understand the basics of material properties, stress and strain.	
		To apply knowledge of mathematics, science, for engineering applications	
		To identify, formulate, and solve engineering & real life problems	
		To design and conduct experiments, as well as to analyze and interpret action and reaction data.	
3	Course Code: (3CE03) Course: Building Construction & Engineering Geology	To understand specific requirement from the component to meet desired needs within realistic constraints of safety.	
		To understand Load bearing and Frame structure.	
		To recognize various types of construction material and its suitability	
		To recognize the various levels in building and its need.	
		To know types of staircase, doors, windows and other related fixtures.	
4	Course Code: (3CE04) Course: Transportation Engineering	To recognize types of rock and minerals and its construction properties.	
		To know reason for earthquake and seismic waves.	
		To identify type of roads and its utility.	
		To understand the application of various road studies at time of survey and actual construction.	
		To design the various types of road pavements.	
5	Course Code: (3CE05) Course: Concrete Technology & RCC	To understand rules regulations, signals , type of gauges and railway sleepers density.	
		To recognize the Airport features and design concept of components for Aero plains movement.	
		To identify types and components of Tunnels and bridges and its design components.	
		To know need and composition of binding material, cement.	
		To recognize concrete and RCC and will be able to perform desired test for suitability,	
6	Course Code: (4CE01) Course: Building Planning Designing & CAD	To analyze RCC Components like slab and lintels.	
		To decide and utilize the admixtures as per the need of Concrete.	
		To understand importance of mix design.	
		Civil Engineering Sem IV	
		7	Course Code: (4CE02) Course: Hydrology & Water Resource Engineering
To apply building planning principles practically while developing projects.			
To study the climatic conditions and decide the corresponding provision in structure.			
To know about Bylaws, Town development authority rules and terms.			
To draw various plans manually and computationally.			
8	Course Code: (4CE03) Course: Surveying	Explain the hydrology and hydrological data.	
		To analyze the hydrological methods for runoff.	
		Evaluate the ground water hydrological problems.	
		Explain the need of irrigation systems and its alternatives.	
		Define principles of Surveying, Remote Sensing and Geomatics.	
9	Course Code: (4CE04) Course: Geotechnical Engineering –I	Describe different instruments, tools, applications and techniques to determine the positions on the surface of the earth.	
		To perform Liner measurement methods of surveying.	
		Differentiate the techniques for setting out alignments, curves, other layouts, modern survey systems etc.	
		To perform survey at elevation and conduct Plane Table survey	
		To determine the Index properties and Atterberg limits for soil classification.	
10	Course Code: (4CE05) Course: Structural Analysis- I	To understand the mechanics of compaction and quality control in field.	
		To explain permeability of soil and methods of dewatering.	
		To calculate the seepage discharge and design the graded filter.	
		To understand the concept of consolidation and stress distribution in soil mass.	
		To decide what is required to be analyzed depending upon type of structural element.	
		To know about degree of freedom, Condition of equilibrium and determinacy of element.	
		To understand reason for failure and permissible limits for safety.	
		To apply the knowledge of beam analysis for practical analysis and design purpose.	
		To make application of various analysis methods for actual structural member analysis and design.	
		To know merits for utilization of suspension, 2 hinged and 3 hinged arches.	

Civil Engineering Sem V		
11	Course Code: 5CE01 Course: Design Of Reinforced & Prestressed Concrete Structures	To analyze and design of rectangular section.
		To analyze and design of slab.
		To analyze and design of staircase and retaining wall.
		To analyze and design of column and footing.
		To understand grid slab and ductile detailing.
Explain the general behavior of PC sections under external load.		
12	Course Code: 5CE02 Course: : SURVEYING & GEOMATICS	Understand the use of different types of curves and their field implications.
		Understand the triangulation adjustment.
		Understand the hydrographic survey.
		Acquire skills in handling spatial data base warehousing and mining.
		Understand the surveying with advance instrument like remote sensing, GPS and GIS.
13	Course Code: 5CE03 Course: NUMERICAL METHODS AND COMPUTER	To use spreadsheet software for solving civil engineering problems.
		To impart knowledge to analyze, solve, design and code numerical method problems using C language.
		To impart knowledge to analyze, solve, design and code civil engineering problems using C language.
14	Course Code: 5CE04: Professional elective(II) REPAIRS & REHABILITATION OF STRUCTURES	Various distress and damages to concrete and masonry structures
		The importance of maintenance of structures, types and properties of repair materials etc
Assessing damage to structures and various repair techniques		
15	Course Code: 5CE05 (OPEN ELECTIVE) Course: (II) DISASTER MANAGEMENT	To understand concept and terms related to Disaster.
		To understand various types of Natural and Artificial Disaster .
		To decide and take actions to mitigate impact of disaster.
		To know roles and responsibility of organizations – public and private, individual and group to manage
Civil Engineering Sem VI		
16	Course Code: 6CE01 Course: DESIGN OF STEEL STRUCTURES	To explain the methods of design of steel structure.
		To design bolted and welded connection.
		To identify the different failure modes of bolted and welded connections, and determine their design strengths.
		To design the Tension and compression member.
		To identify and compute the design loads on a typical steel roof trusses.
		To design basic elements of steel structure like beams, column and bases
17	Course Code: 6CE02 Course: ENVIRONMENTAL ENGINEERING – I	Define and explain the significance of terms and parameters frequently used in water supply engineering.
		Evaluate the influence of the different parameter in design and treatment of water treatment plant (water quality parameters).
		Basic methodology for water treatment (viz., sedimentation, coagulation, flocculation, filtration, disinfection and water softening.)
		An understanding of water quality criteria and standards, and their relation to public health.
18	Course Code: 6CE03 Course: FLUID MECHANICS	Describe basic properties of fluid flow.
		Apply the knowledge to fluid flow problems.
		Analyze the type of flow by using basic of mathematical principle.
		Solve and modeling the pipe flow problems.
19	Course Code: 6CE04 Course: PROFESSIONAL ELECTIVE – II (I) ADVANCED CONSTRUCTION MATERIAL	To understand special type of concrete and supplementary cementitious materials.
		To recognize various types of metals and new alloy steels.
		To understand Thermal and Sound insulating materials.
		To know types of construction chemicals and wastes.
		To recognize types of shoring and formwork materials.
To understand the elementary concept of smart materials.		
20	Course Code: 6CE05 (Open Elective II) Course: Environmental Management	Aware of different environmental problems, their causes and effects.
		Have knowledge regarding different environmental policies & management plans.
		Have thorough knowledge about Environmental Legislation and Acts.
		Acquire information about various agencies for Environmental Managements in India.
		Have knowledge regarding different systems working for Environmental Management.



**Vision Buldhana Educational & Welfare Society's,
PANKAJ LADDHAD INSTITUTE OF TECHNOLOGY AND
MANAGEMENT STUDIES, BULDHANA**

ChikhliRoad ,Yelgaon, Buldhana-443002 (M.S) INDIA www.plit.ac.in email:plitprincipal@gmail.com

Approved by AICTE New Delhi. Recognized by DTE(M.S),Affiliated to SantGadge Baba Amravati University ,Amravati ISO 9001:2015 Certified

Civil Engineering Sem VII		
21	Course Code: 7CE01 Course: : STRUCTURAL ANALYSIS – II	To decide what is required to be analyzed depending upon type of structural element. To know about degree of freedom, Condition of equilibrium and determinacy of element. To understand reason for failure and permissible limits for safety. To apply the knowledge of beam analysis for practical analysis and design purpose. To make application of various analysis methods for actual structural member analysis and design
22	Course Code: 7CE02 Course: Geotechnical Engineering – II	To select the appropriate soil investigation method and get true sub soil parameters used for selection of type of foundation To determine the bearing capacity of shallow foundation. To calculate the lateral earth pressure on retaining wall To find bearing capacity of well foundation and design of pile foundation. To evaluate the settlement of different types of foundation. To suggest the suitable method o ground improvement
23	Course Code: 7CE03 Course: HYDRAULICS ENGINEERING	Illustrate the flow pattern in the open channels, criteria for formation hydraulics jump. Identify different types of GVF profiles and methods. Compute of water hammer pressures in pipe. Design penstocks and surge tanks, understand causes of water hammer
24	Course Code: 7CE04: ENVIRONMENTAL ENGINEERING – II	Define and explain the significance of terms and parameters frequently used in wastewater Treatment. Evaluate the influence of the different parameter in design and treatment of wastewater treatment plant(wastewater characteristics). Basic methodology for wastewater treatment (screening, grit chambers, sedimentation, biological treatment and chemical treatment) Appreciate the advantages, disadvantages and limitations of the technologies and new developments An ability to identify and interpret the criteria for the classification of a substance as a solid/hazardous wastes. Ability to identify air pollution problems and interpret criteria air quality data
25	Course Code: 7CE05 : (PROFESSIONAL ELECTIVE - III) WATER POWER ENGINEERING	Describe the various sources of energy systems. Classify the different power plants. Identify the problems related to hydraulic pressure
Civil Engineering Sem VIII		
26	Course Code: 8CE 01 Course: CONSTRUCTION PROJECT MANAGEMENT	To understand meaning of Project and Project Management. To understand the phases of Project Life Cycle and process of developing it. To use and apply various planning tools like BAR chart, Milestone Chart, Networking Methods like CPM , PERT . To compare and control the project at the time of execution. To update projects and review the status of work. To optimize project using Network crashing method To understand the concept of Project Smoothing/ leveling. To plan and develop the project using Project Planner software's. To understand importance and application of various management like Quality , Safety , Risk handling and Inventory . To turn good manager at individual and organizational level.
27	Course Code: 8CE02 Course: CONSTRUCTION ECONOMICS & ESTIMATING – COSTING	Determine need and basics of Estimation and Construction Economics. Carry of estimation by various methods. Write and understand specification of materials and items of construction. Carry out rate analysis of basic construction material and apply calculation logic for other construction materials. Use of CSR for Estimation work and carry out estimation of residential , Commercial building, Flexible and Rigid Roads, Water Tank , Septic tank etc. Understand need, purpose and process of valuation . Understand and carry out Bidding and tendering process .
28	Course Code: 8CE03 Course: : PROFESSIONAL ELECTIVE - IV (iii) ADVANCED WATER TREATMENT	In-depth knowledge of physical chemical unit processes for advanced water treatment consider the application of this in research projects, and to contribute to the development of new theories and methods in the field. Select or construct appropriate treatment schemes to remove certain pollutants present in water or waste water Developed conceptual schematics required for the treatment of water. Translate pertinent forcing criteria into physical and chemical treatment system. Provide recommendations of appropriate treatment processes for upgrading water and treatment efficiency
29	Course Code: 8CE04 Course: PROFESSIONAL ELECTIVE V (v) CONSTRUCTION EQUIPMENT AND MACHINERY	To recognize the various terms related to the tools that are required for any construction work. To decide which machine or tool can be implemented as per the project life cycle stage. To understand the survey process with help of Total station and will be able to analyze the performance of basic minor tools and machinery To understand various equipments like excavators, shovels, mixers, compactors , crane , hoist , lift etc.