



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA

KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OF CIVIL ENGINEERING

III Year – II Semester	PROFESSIONAL CORE COURSE LAB	L	T	P	C
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PC-Lab -CIVIL ENGINEERING PRACTICE LAB					

COURSE OBJECTIVES:

- Introducing practical aspects of Civil Engineering profession to the students
- Equipping students with the professional knowledge in the design and construction procedures of various Civil Engineering projects
- Introducing the important codes and by-laws that will benefit young professionals

SYLLABUS:

UNIT – I Introduction to Civil Engineering Projects

Types of Infrastructural projects, Fundamentals of construction, Key aspects of Civil Engineering structures, foundations, buildings, roads, bridges, tunnels, pipelines, dams and ports, Stages of project execution, Preparation of reports

UNIT – II Principles of practice

Civil engineering works, Contracts and sub-contracts. Basic business laws of relations, Job planning and execution, Field investigations in Geotechnical Engineering, Preparation of reports, Estimation of bearing capacity and settlement of foundations from field data, Estimation of runoff, Construction of hydrographs, flood forecasting, Analysis and design of water distribution networks, Design of sewers, Determination of highway capacity, Highway geometric design, Design of flexible and rigid pavements, Traffic Signal Design

UNIT – III Codes of Practice

Important codes of Civil Engineering, Environmental impacts, Safety rules for construction, Energy consumption, Sustainability and recycling practices, Optimization and costing

UNIT – IV Case Studies

Important case studies of Civil Engineering including buildings, bridges, ports, offshore structures, airports, stories of success, cases of failure, retrofitting, field visits

COURSE LEARNING OUTCOMES

After completing this course, the student

- Gains adequate confidence to work as a consulting engineer in any field of Civil Engineering
- Understands the duties, responsibilities and codal practices of Civil Engineering profession
- Will be ready to plan, design and execute Civil Engineering projects
- Can build safety related and environmental impact related codal protocols into project planning and execution.
- Can optimize project costs using sustainability concepts

Textbooks:

1. The Civil Engineering Handbook: Edited by W.F. Chen and J.Y. Richard Liew, CRC Press
2. Garold D. Oberlander (1993). Project Management for Engineering and Construction. McGraw Hill Book Co, Singapore.
3. Failure Case Studies in Civil Engineering: Structures, Foundations, and the Geo environment, Edited by Bosela, Paul A., Brady, Pamalee. Delatte, Norbert J., Parfitt, M. Published by ASCE.

References:

1. IS codes of relevance to Civil Engineering
2. National Building Code of India, 2016