Techno India NJR Institute of Technology

Professional Practices & Field Engineering Lab
(7CE4-22)

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For Techno India NJR Institute of Technology
पंकज पोरवाल
Dr. Pankaj Kumar Porwal
(Principal)

RAJASTHAN TECHNICAL UNIVERSITY, KOTA

Syllabus

IV Year- VII & VIII Semester: B. Tech. (Civil Engineering)

7CE4-22: Professional Practices and Field Engineering Lab

Credit 1 **Max. Marks: 50(IA:30, ETE:20)**

0L+0T+2P

1. Different types ofKnots
2. Site plan, index plan, layout plan, plinth area, floor area ofbuildings
3. Foundation plan layout infield
4. Bar bendingschedule
5. Specifications- For different classes of building and Civil Engineeringworks
6. Specifications of buildingcomponents
7. Valuation of buildings andproperties
8. Work at heights – scaffolding and ladders use, type of scaffolds, safety requirements, design and load factors, defects and inspection norms, type of ladders, upkeep, defects and good maintenancetips

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Course Overview:

Field Engineering Lab course is designed to provide Civil Engineers with hands-on experience in field testing and measurement techniques. The course covers the following topics:

1. Soil mechanics laboratory testing: Students will learn how to conduct various laboratory tests on soil samples to determine their physical and engineering properties, such as compaction, permeability, and shear strength.

2. Concrete laboratory testing: Students will learn how to test the strength and durability of concrete by conducting compressive strength, flexural strength, and slump tests.

3. Asphalt laboratory testing: Students will learn how to test the properties of asphalt, such as viscosity, flow, and Marshall stability.

4. Surveying and leveling: Students will learn how to use surveying equipment to measure and record elevation, angles, and distances.

5. Material testing: Students will learn how to test the properties of various construction materials, including steel, wood, and masonry.

6. Field inspection and documentation: Students will learn how to inspect and document construction sites, and how to detect and report potential issues.

The course includes a mix of classroom lectures and laboratory practicals to provide students with a comprehensive understanding of field engineering techniques. The course is designed to be hands-on and interactive, with an emphasis on real-world applications of the material covered.

Course Outcomes:

CO.NO.	Cognitive Level	Course Outcome
1	**Analysis**	Understand the Different types of Knots Site plan, index plan, layout plan, plinth area, floor area of buildings
2	**Evaluation**	Understand the Foundation plan layout infield
3	**Synthesis**	Analysis of Bar bending schedule

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4	**Synthesis**	Understand the Specifications- For different classes of building and Civil Engineering works
5	**Application**	Understand the Valuation of buildings and properties

Prerequisites:

1. Basic understanding of designs and drawing
2. Understanding of civil engineering materials

Course Outcome Mapping with Program Outcome:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
Course Outcome	3	2	2	2	2	1	1	1	2	1	1	2	2	2	2
	2	2	1	1	1	2	1	1	2	2	2	1	1	2	2
	3	2	2	2	2	1	1	1	2	1	1	2	2	2	2
	3	3	3	2	2	1	2	1	2	1	1	1	2	2	1
	3	3	3	2	2	1	2	1	2	1	1	1	2	2	1
CO471 (AVG)	2.8	2.4	2.2	1.8	1.8	1.2	1.4	1	2	1.2	1.2	1.4	1.8	2	1.6

Course Coverage Module Wise:

Faculty Lab Manual Link

https://drive.google.com/file/d/1cyNIDpgd-uhb5jFUcSxFw5ZLGCvGZOig/view?usp=share_link

Assessment Methodology:

1. Practical exam.
2. Internal exams and Viva Conduct.
3. Final Exam (practical paper) at the end of the semester.

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