Lok Jagruti Kendra University
University with a Difference

Diploma in Civil Engineering

LJ Polytechnic

Course Code:025050106

Civil Engineering Workshop

Programme / Branch Name	Diploma in Civil Engineering					
Course Name	Civil Engineering Workshop				**Course Code**	025050106
Course Type	HSSC	BSC	ESC	PCC	OEC	PEC

Legends: HSSC: Humanities and Social Sciences Courses BSC: Basic Science Courses
ESC: Engineering Science Courses PCC: Program Core Courses
OEC: Open Elective Courses PEC: Program Elective Courses

1. Teaching and Evaluation Scheme

Teaching Hours / Week				**Evaluation Scheme**			
L	**T**	**P**	**Total Credit**	**CCE**	**SEE (Th)**	**SEE (Pr)**	**TOTAL**
0	0	4	2	50	-	50	100

Legends:
L: Lectures T: Tutorial P: Practical
CCE: Continuous & Comprehensive Evaluation
SEE (Th): Semester End Evaluation (Theory)
SEE (Pr): Semester End Evaluation (Practical)

2. Prerequisites

- ✓ No prerequisites

3. Rationale

The subject is to provide in-depth practical knowledge with their application in a real-life situation with a practical learning approach. To have a balanced overall development of students, it is necessary to integrate theory with practice. Workshop practices are included in the curriculum to provide hands-on experience about the use of different tools and basic construction practices. The students are advised to practice with an understanding of necessary technical aspects and safety precautions. Students should be able to supervise construction activities anduse quality control techniques, maintain tools and equipment with safety to themselves, co-workers and the constructed components of the building. Working in the field develops the attitude of teamwork and safety awareness. This course provides a unique experience of fieldwork.

4. Objectives

- ✓ Identify the various construction activities at the site.
- ✓ Identify tools and equipment with their functions used for civil works.
- ✓ Select materials, tools and sequence of operations to do the work as per the given specification/drawing.
- ✓ Apply safety procedures and remedial measures while working on a construction site.
- ✓ Identify the plumbing accessories and perform plumbing job activities.

5. List of Practicals / Exercises

The practicals/exercises have been properly designed and implemented in an attempt to develop different types of skills, so that students can acquire the competencies/programme outcomes. Following is the list of practicals/exercises.

Sr. No.	Practical / Exercises	Key Competency	Hours
1.	Identify the substructure construction activities and the equipment/ tools being used at the site during the visit.	Foundation	6
2.	Identify the superstructure construction activities and the equipment/ tools being used at the site during the visit.	Construction activities	6
3.	Carry out the method of setting out the foundation trenches.	Foundation trenches	6
4.	Assemble a corner brick wall in six courses by arranging bricks in stretcher and header bond. Ensure that wall is in line and at a right angle to an existing wall.	Types of brick bond	6
5.	Prepare a cement mortar of various proportions 1:3, 1:4 and apply plaster on a plain wall and observe the line, level and plumb.	Mortar preparation and plasterwork	6
6.	Mark level of given height from ground level at different locations in the specified location using the water pipe technique.	Water pipe technique	4
7.	Identify types of bent up bars and stirrups at the site during the field visit for the reinforcement for beams, columns and slab.	Steel reinforcement	4
8.	The student will collect the information regarding the IS provisions for the construction materials like cement, bricks, reinforcement and sand.	Knowledge of IS codes	4
9.	Collect the list of an available brand of vitrified and glaze tiles with their IS specifications and prepares a report on it.	Vitrified and glaze tiles	2
10.	Collect the technical information for various plumbing accessories such as GI/PVC pipes, bend, union, couplers of various dimensions and prepare a report on it.	Plumbing accessories	2
11.	Assemble a pipeline as per the given drawing using pipes of one-inch diameter, pipes of half-inch diameter, nipple, reducer, union, valves, T, elbows and then disassemble this pipeline.	Assemble and disassemble the pipe accessories	4
12.	Undertake the local survey for various centering, shuttering material along with their specifications.	Centering and shuttering materials	2
13.	Assemble and disassemble the shuttering material for a beam, column of a given dimension using appropriate materials.	Assemble and disassemble the centering and shuttering materials	4
		Total Hours	**56**

6. Textbooks

1) Building Construction, by B.C Punmia, Laxmi Publication, New Delhi.

7. Reference Books

1) Workshop Technology by B.S. Raghuwanshi, Dhanpat Rai & Co.
2) Workshop Technology by HS Bawa, Tata McGraw Hill Publishers, New Delhi.
3) PWD- Standard data book for building work by PWD.
4) CPWD Work Manual by CPWD, New Delhi.
5) Construction Materials by D. N. Ghose,Tata McGraw Hill, New Delhi.

8. List of Publications

1) National Building Code of India 2016- Volume I & II by Bureau of Indian Standards.
2) Indian Practical Civil Engineering Handbook by P. N. Khanna.
3) PWD Handbooks.
4) IS Codes for Testing Construction Materials.

9. Open Sources (Website, Video, Movie)

1) www.nptel.ac.in
2) www.theconstructor.org