Lok Jagruti Kendra University
University with a Difference

Diploma in Architectural Assistantship

LJ Polytechnic

Course Code:025080103

Architectural Graphic Techniques

Programme / Branch Name	Diploma in Architectural Assistantship					
Course Name	Architectural Graphic Techniques				**Course Code**	025080103
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 / Credits				**Evaluation Scheme**			
L	**T**	**P**	**Total Credit**	**CCE**	**SEE (Th)**	**SEE (Pr)**	**TOTAL**
4	0	4	6	50	50	100	200

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 prerequisite required

3. Rationale

Architectural Graphic Techniques is a subject that imparts fundamental knowledge about using the drawing instruments which is essential for all subjects which are drawing-oriented. It also imparts to the student, knowledge, and skill of using various types of architectural letters, gothic letters, and of different types and quality of lines. This skill can be developed and perfected by drawing various geometrical constructions, drawing signs and symbols used at various levels in drawing plans, elevations, and sections of the building. Orthographic projection is a topic that helps the student understand architectural terminologies like the plan, elevation, side elevation, drawing in first angle method and of projection by drawing plans, elevations, and side elevations of the plane, geometrical and complex objects. This skill ultimately can be utilized in preparing all the presentation drawings of a building.

4. Objectives

- ✓ To introduce the concepts and fundamentals of Architectural Graphic Techniques.
- ✓ To understand drawing as a medium to visualize and communicate design ideas.
- ✓ To familiarize the students with the language of architecture & buildings as two-dimensional and three-dimensional representations.

5. Contents

Unit No.	Unit Name	Topics	Learning Outcomes	% Weightage	Hours
1.	**Geometrical Construction**	1.1. Importance of Architectural Graphic Techniques. 1.2. Use of Drawing Board, Parallel Scale, Adjustable Set-Squares, Compass (Whole Set), Different Grade of Pencils, Rubber, Clips, Sandpaper, Clutch Pencils, Scales, Stencils, Inking Pens, Circle Templates, French Curves, Templates, etc. 1.3. Introduction to Plane Geometry and Exercises in Lines and Angles, Construction of Triangles, Quadrilaterals, and Regular Polygons. 1.4. Construction of Plane Curves, Ellipse, Parabola, Hyperbola, and Ovals. 1.5. Construction of Different Types of Regular Polygons Given the Length of a Side.	• General Introduction of Drafting Fundamentals, Drafting Equipment and Drawing Setup, Drafting Techniques, Line Work, Line Types, Line Weights, Line Quality. • Draw Parallel and Perpendicular Lines and Divide them into Various Parts With the Help of Drafting Techniques Using Different Instruments. • Draw Different Geometrical Shapes With The Help of Drafting Techniques Using Different Instruments.	20	14
2.	**Development of Surfaces**	2.1. Development of Simple and Truncated Geometrical Solids Such as The Cube, Cuboid, Prisms, Pyramids, Cylinder and Cone.	• Draw the Development of the Surface of Different Types of Simple Solids. • Draw the Development of The Surface of Different Types of Truncated Solids	10	06
		3.1. Different Types of Planes like Square, Rectangle, Pentagon, Hexagon, and Solids Like a Cube, Prism, Pyramids, Cone and Cylinder.	• Draw Projections of Different Types of Planes Like Squares, Rectangle, Etc. In Standing Positions. • Draw Projections of Different Types of		

3.	**Projection of Planes, solids, and Sections of Solids**	3.2 Different Terms Like Apex, Axis, Slant Edge, Meaning and Identification of the True Length of the Base Side, the True Length of the Slant Edge, the True Shape of the Triangular Face of Pyramids, Etc. 3.3 Introduction of Cutting Planes, Auxiliary Planes, True Shape, Full Section, Half-Section. 3.4 Procedure for Drawing The Projection of Sectioned Solid Such As The Cube, Prism, Pyramid, Cone and Cylinder) for The Given Position of The Cutting Plane.	Planes Inclined to One Plane only. • Draw Projections of Different Types of Solids Like The Cube, Prisms, Pyramids, Cylinder in a Standing Position. • Draw Projections of Different Types of Sections of Solids for Different Positions of The Cutting Plane.	20	16
4.	**Orthographic, Axonometric And Isometric Views**	4.1. Orthographic Projections, Planes and Principles of Projection. 4.2. Difference Between Orthographic Projection. 4.3. Projection of The Objects (Solid Forms) Plans and Elevations. 4.4. Placing Solid Forms on Different Angles and Drafting Its Orthography, Axonometric and Isometric Views.	• Draw The Objects (Solid Forms) With Different Angels Helping to Understand Buildings from Different Angles.	20	12
5.	**Semiconductor Devices and Its Applications**	5.1. Important Terms - Picture Plane, Station Point, Vanishing Point, Eye-Level, Ground Level, Central Visual Ray, etc. 5.2. Perspective Drawings, One Point Perspective, Two Point Perspective	• Draw Perspective Drawings of Given Problems with Respect to Simple Objects Placed in Relation with Picture Plane and Station Point. • Draw Perspective Drawings of Given Problems with Respect to Simple Objects Placed in Relation	20	08

			With Pictureplane and Station Point, Simple Object Keeping Eye Level at Different Levels.		
				Total Hours	**56**

6. 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.	Practicals / Exercises	Key Competency	Hours
1.	Use drafting techniques using various drafting instruments. Prepare drawing sheets showing various drafting instruments, lines (types, intensity), various Architectural lettering. Prepare the sheets to understand various shapes with the help of various angels.	Proper usage of Instruments and the importance of line weightage. Geometrical shapes drafting techniques	14
2.	Prepare sheets pertaining to the development of various shapes.	Construction of 3d shapes	06
3.	Prepare drawing sheets of various shapes with projections of planes and solids. Sections of Solids – 3 sheets of sections of different forms	Projections of 3d shapes from HP and VP Sections of 3d shapes	16
4.	Two Sheets on the Axonometric view containing 6 problems. Two sheets on Isometric view containing 6 problems. Two sheets on the Orthographic view containing 6 problems.	Views from Different angels	12
5.	Two sheets of 1 point perspective 3 sheets of 2 point perspective	3d objects from 1Pt. Perspective and 2 Pt. Perspective.	08
		Total Hours	**56**

7. Suggested Specification Table for Evaluation Scheme

Unit No.	Unit Name	Distribution of Topics According to Bloom's Taxonomy					
		R %	U %	App %	C %	E %	An %
1.	Geometrical Construction	50	20	30	-	-	-
2.	Development of Surfaces	10	60	-	30	-	-
3.	Projection of Planes, Solids and Sections of Solids	40	30	20	10	-	-
4.	Orthographic, Axonometric and Isometric Views	10	20	20	50	-	-
5.	Perspective Views	10	50	30	00	-	-

Legends: R: Remembering U: Understanding
App: Applying C: Creating
E: Evaluating An: Analyzing

8. Textbooks

1) Engineering Drawing - N.D. Bhatt.

9. Reference Books

1) Graphic Thinking for Architects and Designers - Paul Leaseua.
2) Graphics in Architecture - Francis D. K Ching., Steven P. Juroszek
3) Visualization Techniques – Richard B.Leinbach.
4) Design Drawing - Ching, Francis D. K.

10. Open Sources (Website, Video, Movie)

1) https://www.creativebloq.com/features/one-point-perspective
2) https://en.wikipedia.org/wiki/Gothic_alphabet
3) http://cbitkolar.edu.in/wp-content/uploads/2020/04/Projection-of-Solids.pdf
4) https://ktuengineeringgraphics.wordpress.com/projections-of-solids/
5) https://www.technologystudent.com/designpro/ortho1.htm