

# GUJARAT TECHNOLOGICAL UNIVERSITY



Program Name: Bachelor of Architecture

Level: UG

Branch: Architecture

Subject Code: BA01050021

Subject Name: Architectural Graphics and Drawing -I

w. e. f. Academic Year:	2026-27
Semester:	1st
Category of the Course:	Professional Core Courses (PCC)

<b>Prerequisite:</b>	Zeal to learn the subject.
<b>Rationale:</b>	<p><b>Architectural Graphics and Drawing -I</b> is designed to develop fundamental skills in using drawing instruments, which are essential for all drawing-based subjects in architecture. The subject also helps students learn:</p> <ul style="list-style-type: none"><li>• Different types of <b>Architectural Lettering</b>, Various types of lines used in technical drawings Geometrical constructions used in plans, elevations, and sections</li><li>• The topic of <b>Orthographic Projection</b> enables students to understand key architectural terms such as: Plan ,Elevation, Side Elevation</li><li>• Students learn to draw plane, geometrical, and complex objects using the <b>projection method</b>.</li><li>• Theory of basic perspective and sciography for representation.</li><li>• Overall, this subject builds the foundation required to prepare clear and accurate <b>presentation drawings</b> of buildings.</li></ul>

## Course Outcomes:

After Completion of the Course, Student will able to:

No	Course Outcomes
01	Draw various geometrical shapes with dimensions using different drafting tools.
02	Prepare basic architectural drawings with appropriate lettering, graphics and dimensioning.
03	Draw orthographic views from a given isometric/axonometric views of simple objects and vice versa.
04	Theory of Perspective and sciography.

## Teaching and Examination Scheme:

Teaching Scheme (in Hours)			Total Credits L+T+P	Assessment Pattern and Marks				Total Marks
L	T	P	C	Theory		Tutorial / Practical		
				ESE (E)	CA (M)	CA (I)	ESE (V)	
2	0	2	4	50	50	00	00	100

Legends: L-Lecture; T – Tutorial/Teacher Guided Theory Practice; P -Practical; C – Credit, CA - Continuous Assessment; ESE -End Semester Examination.



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## Course Content (Theory):

Unit No.	Content	No. of Hours	% of Weightage
1	<b>Basic Understanding of Drafting Techniques:</b> 1a. Use various types of drafting instruments associated with the drafting techniques.	2	08
2	<b>Lines, lettering and Dimensioning:</b> 2a. Use different types and intensities of lines in a given drawing. 2b. Use different lettering styles in a given drawing. 2c. Use relevant techniques for the dimensions in a given drawing.	3	10
3	<b>Geometric Shape Constructions:</b> 3a. Carryout geometrical constructions using drafting tools and techniques.	5	12
4	<b>Orthographic Projections &amp; Auxiliary Projections :</b> Theory of projections such as object projectors, planes of projections (views), direction of vision Identify the quadrant in which the object is located 4a. Draw the projection of points, lines in various positions with respect to H.P & V.P. 4b. Draw the projection of planes placed in various position with respect to H.P. & V.P 4c. Draw the projection of solids placed in various position with respect to H.P. & V.P	10	40
5	<b>Theory of Perspective :</b> Important Terms - Picture Plane, Station point, Vanishing point, Eye level, Ground level, Central visual ray, etc. 5a. One Point Perspective 5b. Two Point Perspective 5c. Three Point Perspective	6	18
6.	<b>Theory of Sciography :</b> Meaning and definition of Sciography Importance of shadows in architectural presentation Purpose of studying light and shade in architecture	4	12
<b>Total</b>		30	100

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## Suggested Specification Table with Marks (Theory):

Unit No.	Unit Title	Distribution of Theory Marks						Total Marks
		R Level	U Level	A Level	N Level	E Level	C Level	
I	Basic Understanding of drafting Techniques	2	2	2	0	0	0	06
II	Lines, lettering and dimensioning	1	2	2	0	0	0	05
III	Geometrical Constructions	2	2	2	0	0	0	06
IV	Orthographic Projections & Auxiliary Projections	2	8	8	0	0	0	18
V	Theory of Perspective	2	4	4	0	0	0	10
VI	Theory of Sciography	1	2	2	0	0	0	05
Total		10	20	20				50
%		20	40	40				100

Where R: Remember; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create (as per Revised Bloom's Taxonomy)

## References/Suggested Learning Resources:

### (a) Books:

Sr.No.	Title of Book	Author	Publication with place, year and ISBN
1	Engineering Drawing	N.D.Bhatt	Charotar Publishing House; Anand, 2014. ISBN : 9789380358963
2	Textbook of Engineering Drawing	P.J. Shah	Chand, New Delhi. 2013 ISBN : 9788121941822
3	Engineering Drawing	M.B. Shah, B.C. Rana	Pearson's. 2009 ISBN: 9788131759714
4	Engineering Drawing	Basant Agrawal, C. M. Agrawal	McGraw-Hill, 2019 ISBN : 9789353167448

### (b) Open source software and website:

- [https://www.youtube.com/results?search\\_query=engineering+drawing](https://www.youtube.com/results?search_query=engineering+drawing)
- <https://youtu.be/MT1T31GtGpg>
- <https://youtu.be/WEwkepkv6mg>
- <https://youtu.be/trJQIvatIpI>
- <https://nptel.ac.in/courses/112/103/112103019>
- <https://nptel.ac.in/courses/112/105/112105294>
- [https://en.wikipedia.org/wiki/Engineering\\_drawing](https://en.wikipedia.org/wiki/Engineering_drawing) i)
- <https://www.slideshare.net/search/slideshow?searchfrom=header&q=engineering+drawing>
- [https://www.scribd.com/search?content\\_type=tops&pa](https://www.scribd.com/search?content_type=tops&pa)



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## Suggested Course Practical List:

Unit No.	Practical Content	Unit No.	Approx. Hrs. required
1	<b>Basic Understanding of Drafting Techniques:</b> <ul style="list-style-type: none"><li>Practice drafting techniques by using the drafting instruments like drawing board, parallel scale, adjustable setsquares, compass, different grade of pencils, rubber, clips, clutch pencils, scales, stencils, inking pens, circle templates, French curves etc.</li></ul>	1	2
2	<b>Lines, lettering and Dimensioning:</b> <ul style="list-style-type: none"><li>Different types of lines and intensities of lines.</li><li>Lettering including single stroke letters and Gothic letters</li><li>Dimensioning terms and annotations, placing of dimension and unit of dimensions in drawings.</li></ul>	2	3
3	<b>Geometric Shape Constructions:</b> <ul style="list-style-type: none"><li>Draw a perpendicular to a given line with different conditions.</li><li>Draw a line through a given point parallel to a given straight line.</li><li>Divide a given straight line into any number of equal parts by various methods.</li><li>Trisect the given right angle.</li><li>Construction of different types of regular polygons given the length of a side.</li><li>Construct an ellipse by concentric method, arcs of circles method, oblong method, and loop &amp; thread method.</li></ul>	3	6
4	<b>Orthographic Projections &amp; Auxiliary Projections :</b> <ul style="list-style-type: none"><li>Projection of points, lines when placed in various positions with respect to H.P &amp; V.P.</li><li>Projection of planes when placed in various position with respect to H.P. &amp; V.P</li><li>Projection of different types of solids when placed in various position with respect to H.P. &amp; V.P(Cube ,Cuboid, Pyramid, Cone, Cylinder)</li></ul>	4	12
5	<b>Theory of Perspective :</b> <ul style="list-style-type: none"><li>Draw a neat sketch of different 3D forms like cube, cuboid, pyramid, cone, cylinder in One Point, Two Point perspective &amp; Three point perspective.</li></ul>	5	4
6	<b>Theory of Sciography :</b> <ul style="list-style-type: none"><li>Create a neat sciography of different 3D forms like cube, cuboid, pyramid, cone, cylinder</li></ul>	6	3
<b>Total</b>			<b>30</b>

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## List of Laboratory/Learning Resources Required:

Sr.No	Equipment Name with Broad Specifications
1	Drawing instruments for class room teaching (Large Size).
2	Drawing Board (A1 : 23"x32" Size)
3	Other Instruments: Parallel, Set squares (45° and 30°-60°), Adjustable Set Squares, Protractor, Drawing Compass, Dividers, Drawing Pencils, Circle Master, French Curves, Stencils (8-6-4 mm, All in One), Eraser, Drawing sheets, Drawing Pins/Clips, Sheet Container and Drawing instrument box. <i>(Note : Roller Scale to be used only for Sketch book practice work)</i>
4	Interactive board with LCD overhead projector

## Suggested Project List:

1. Prepare models of different forms and shapes.
2. List the symbols, annotations and dimensions used in drawings.
3. List the type of scales used by comparing the size of component on drawing sheet with the actual component.

## Suggested Activities for Students:

4. Take two simple objects in your vicinity and sketch 3D isometric of them. Also draw 2D orthographic projections of them (all views).
5. Download the soft copy of plan, section and elevation of any building. Read and interpret this drawing.

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