



**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Syllabus for Diploma of Vocation (D.Voc.), 6<sup>th</sup> Semester**  
**Branch: Architectural Assistantship**  
**Subject Name: Technical Drawings**  
**On Job Training (Elective)**  
**Subject Code: 1260607**

**Type of course:** On Job Training (Elective)

**Prerequisite:** Knowledge of space planning along with the construction materials and details of a small / medium scale residential project.

**Rationale:** The knowledge and skill of preparing technical / working drawings is very essential for an Architect. Designing a building and actual execution both are important aspects of the actual field in architecture. Working is essentially prepared for actual construction of a designed building. They consist of basic drawings with all dimensions along with details. The basic set includes all plans, sections, and elevation with accurate dimensions. All finishes are also specified in the detailed drawings. All these put together facilitate in construction the building on site exactly according to its design. Thus, it is important for students to learn to prepare the technical / working drawings as it is the core ability required for architectural assistantship.

**Teaching and Examination Scheme:**

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical		
			ESE (E)	PA(M)	ESE (V)	PA (I)		
0	0	15	15	0	0	100	100	200

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

**Content:**

Sr. No.	Content	Total Hrs.
1	<p><b>Study Of Technical / Working Drawings Of Small-Scale Projects Done In The Office</b></p> <p>Study of a set of working drawings prepared by a practicing architect. All basic drawings to be studied – plans, elevation, sections and understand the design in a holistic manner. Details of all elements to be studied with respect to material, joinery, fixing.</p> <p>Understanding the importance of scale, proportion, and structure through the study of drawings.</p> <p>Site visits to completed (small scale) projects and document to understand application of different materials, services and type of a structure.</p>	25
2	<p><b>Market Survey</b></p> <p>Visits to architectural materials, finishes and fixtures showrooms to enhance the understanding of the application in the drawing.</p> <p>Materials – wood, upvc, steel, etc</p> <p>Finishes – laminates, veneer, paints, etc</p> <p>Fixtures – Taps, showers, cocks, valves, etc</p> <p>Hardware – hinges, handles, locks, etc</p> <p>Sanitary wares – Wash basin, WC, Bathtubs, etc</p>	25



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	<p>Electric supplies – cables, switches, DB, etc</p> <p>Flooring – Stones, vitrified tiles, glass, etc</p> <p>Kitchen – Baskets, channels, etc</p>	
3	<p><b>Preparing Technical / Working Drawing Of A Designed Project – Manually / Cad</b></p> <p>Understand the building with reference to site and prepare a site layout. Site layout including building units, roads and landscaped areas to be drawn clearly without rendering.</p> <p>The basic building unit drawings should be drawn to appropriate scales or should be adopted with respect to the project available in the office.</p> <p>Drawings to be prepared are – all plans (foundation plan, grid plan, floor plans), elevations, sections.</p> <p>Understanding of line weight to be implemented – ground line, elevation lines, sectional lines, site boundary line, cut lines.</p> <p>Representation of materials in section to be shown through hatch.</p> <p>The drawing format for preparing working drawings, standardized, complete with borderline, notes, revision table and nameplate.</p>	50
4	<p><b>Representing Details In A Drawing</b></p> <p>All layout to be prepared – electrical layout, flooring layout, water supply and drainage layout.</p> <p>All detailed drawings to be prepared for the execution of the project. Thorough understanding of the material (sizes, properties, types) to be developed before making detailed drawing.</p> <p>Detailed drawing includes.</p> <p>Doors – windows, Kitchen, Staircase, Railing, Toilet.</p> <p>Scale of detailed drawings should be drawn to a scale of 1: 5 to 1: 25.</p> <p>All details designed and worked out individually by the students under the guidance of the Architect.</p> <p>Detail drawings should be co-related with the basic drawings before finalization.</p>	25
5	<p><b>Presentation Drawings</b></p> <p>Generate perspective view / building models by using presentation software – SketchUp, photoshop, etc</p> <p>Presentation drawing includes 3 D Visualization, material application, position of openings, building mass, climatic inferences, walk through.</p>	25
6	<p><b>On Site Execution</b></p> <p>Student should be able to understand site under the supervision of an Architect to execute following things –</p> <p>Setting of a layout</p> <p>Foundation – load bearing walls, columns</p> <p>Ground beam, plinth beam, coping</p> <p>Superstructure – plinth, walls, columns, sill, lintel, beam, slab, doors, windows</p>	50



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	Services – plumbing, electrical Finishes – flooring, plaster and paint, cladding, etc Regular supervision / site visits to be done along with an architect at various stages for the flawless execution of the work.	
	<b>Total</b>	200

**Reference Books:**

1. The Professional Practice of Architectural Working Drawings, Osamu A. Wakita, Nagy R. Bakhoun, Richard M. Linde, fifth edition
2. Working Drawings Handbook, Keith Styles and Andrews Bichard, fourth Edition
3. Building Construction, W.B.Mckay. (All Volumes) Khanna Publisher, New Delhi
4. Construction of Buildings (All volumes), Barry
5. Time saver standards for building, Watson

**Course Outcomes:**

Sr. No.	CO Statement	Marks % Weightage
1	To develop skills to prepare technical drawing.	10
2	To understand importance of building system and services and its application.	10
3	To understand material and its properties to be used in building.	10
4	To prepare a complete set of drawings in a sequential manner.	30
5	To learn presentation techniques to present the design.	10
6	To develop understanding for the execution of design on site.	30

**Laboratory work:**

Various site visits (ongoing and completed)

Visit architectural material, finishes and fixtures vending stores / shops / showrooms.

**List of Open-Source Software/learning website:**

Students must refer to the following sites to enhance their learning ability.

1. [www.archnet.org](http://www.archnet.org)
2. [www.greatbuildings.com](http://www.greatbuildings.com)
3. Websites of architectural product manufacturers e.g. sanitary wares manufacturers, door-window manufacturers, flooring material manufacturers and traders.