

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT
COURSE CURRICULUM

Course Title: Building Drawing
(Code: 3320601)

Diploma Programmes in which this course is offered	Semester in which offered
Civil Engineering, Environment Engineering, Transportation Engineering	Second Semester

1. RATIONALE

Drawing is very important subject especially for civil engineers. This is also considered as a language of engineering communication. Basic and primary features of Engineering Drawing are being taught in Basic Engineering Drawing (code 3300007). At advance stage the skills of producing working drawings are necessary for technicians, this course has been designed in such a way that a technician can produce more detailed Civil Engineering Drawing related to construction of single storied, double storied residential buildings, public buildings and other simple civil engineering structures. Moreover, application of building regulation and by-laws as per local authorities will also be taught in this course, knowledge of which is must for planning buildings so that plan is approved by local civic authorities.

2. COMPETENCIES

The course content should be taught and implemented with the aim to develop different types of skills so that students are able to acquire following competencies:

- i. Read and interpret the building construction drawings.
- ii. Produce residential building drawing and other construction details with Building services considering building control regulations and by-laws

3. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks
L	T	P		Theory Marks		Practical Marks		
			C	ESE	PA	ESE	PA	
2	0	4	6	70	30	40	60	200

Legends: L-Lecture; T – Tutorial/Teacher Guided Student Practice; P - Practical; C – Credit;; ESE - End Semester Examination; PA - Progressive Assessment.

Note: It is the responsibility of the institute heads that marks for **PA of theory & ESE and PA of practical** for each student are entered online into the GTU Portal at the end of each semester within the dates specified by GTU.

4. DETAILED COURSE CONTENTS

Unit	Major Learning Outcomes	Topics and Sub-topics
Unit – I Introduction	1a.Appreciate types of Drawings and its importance. 1b.Draw various types of Projections 1c.Use building drawing Symbols, Conventions and Abbreviations 1d.Apply various types of scales as per needs.	1.1 Types of drawing with appropriate scale & uses index map, key plan, village map, site plan, layout plan. 1.2 Types of Projection adopted in Building Drawing 1.3 Scales for various types of Drawings 1.4 Working drawing, large scale drawing enlarges scale drawing. 1.5 Symbols, Conventions and Abbreviations for - Electrical fittings , water supply ,sanitary fittings, material for construction etc. 1.6 Sizes of various standard papers
Unit– II Building, regulation, byelaws and Principal of Planning	2a. Apply the Bye laws and Principles of Planning for residential and other public buildings.	2.1 building bye laws of local body for residential building (show local authority publication) -plot area, built up area, carpet area, FSI, size of rooms, margins, heights, passages, ventilation, circulation and others 2.2 principles of planning for residential building in detail such as - Room dimension, area, heights, privacy, roominess factor ,orientation, grouping, drainage, aspect, prospect, drainage, economy 2.3 Color code for alteration and addition in existing building 2.4 Approval procedure with respect to bye laws
Unit– III Planning of Residential Building	3a. Develop concept plan of buildings 3b.Prepare detail drawings for single and two storied residential building and public building	3.1 Concept plan and drawing of residential single and two storied buildings 3.2 Concept plan of public buildings such as hospital ,school, shopping center , office building and industrial unit 3.3 Given situation & Plot area, preparation of detailed drawing of a single storied and double storied residential building with detail of Line plan, Detailed Plan, Ground floor Plan, First floor plan, Elevation and Sections

Unit	Major Learning Outcomes	Topics and Sub-topics
Unit- IV Perspective Drawings and modeling	4a. Generate perspective view of simple building by different methods 4b. Develop building models	4.1 Introduction of perspective view and other related terms. 4.2 Perspective view of single room residential building and simple public buildings 4.3 Elements of perspective drawing. 4.4 Model preparation of simple buildings
Unit- V Constructional details drawing of buildings	5a. Draw details of parts of buildings 5b. provide scope and provisions for building components and services	5.1 Drawings of Parts of buildings such as staircases, chajjas , projections, columns , pier, slabs, footings etc 5.2 provisions in drawings for building services such as air conditioning, plumbing, water supply and firefighting, elevators, lifts and escalators etc 5.3 Electrification plan and drawings: 5.4 Show building service like water supply, sanitary, electrification on line plan

5. SUGGESTED SPECIFICATION TABLE WITH HOURS & MARKS (THEORY)

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
1.	Introduction	04	04	02	00	06
2.	Building, regulation, bye-laws and Principal of Planning	06	02	04	04	10
3.	Planning of Residential Building	08	04	10	20	24
4.	Perspective Drawings and modeling	06	04	04	10	18
5.	Constructional details drawing of buildings	04	02	04	06	12
Total		28	16	24	40	70

Legends: R = Remember; U = Understand; A = Apply and above levels (Bloom's revised taxonomy)

Note: This specification table shall be treated as only general guideline for students and teachers. The actual distribution of marks in the question paper may vary from above table.

6. SUGGESTED LIST OF PRACTICAL/EXERCISES

The exercises/practical should be properly designed and implemented with an attempt to develop different types of skills so that students are able to acquire the competencies mentioned above.

S. No.	Unit No.	Practical/ Exercises	Approx Hours. Required
1	I	interpretation of building drawings approved under local authority	02
2	II	Draw symbols , conventions and Abbreviations in sketch book	02
3	II	Study of building by-laws act and national building code (NBC)	02
4	III	Draw detail plan on drawing sheet - 1 plan ,elevation and section of existing building (actual Measurement Drawing)	08
5	IV	Draw detail of foundation plan of one room building /two room building in sketch book	04
6	IV	Draw working drawings sheet -2 for single storied residential building (bungalow)on 250sq.m plot with scale and show following detail: GF & FF plan with elevation, section and opening schedule	16
7	V	Prepare concept plan of any one other type of building considering local bye laws: high school building, Shopping centre, Hospital and Industrial Building in sketch book.	08
8	VI	Develop perspective view of single room residential building with verandah & steps by any methods.	04
9	VI	Visit a residential building and observe the existing building service and Draw line plan for above services in sketch book	04
10	VI	Prepare a model of a simple building using card board	06
TOTAL			56

7. SUGGESTED LIST OF PROPOSED STUDENT ACTIVITIES

Following is the list of proposed student activities like: course/topic based seminars, internet based assignments, teacher guided self learning activities, course/library/internet/lab based mini-projects etc. These could be individual or group-based.

S. No.	Unit No.	Student Activities
1	III	Visit a construction site and collect drawings for the project.
2	II	Visit a urban development authority office and purchase a Development control regulations (by-laws) of local Body.
3	III	Visit a public building like school, hospital, shopping centre.

8. SUGGESTED LEARNING RESOURCES

A. List of Books

S.No.	Author	Title of Books	Publication
1	V. B. Sikka	Civil engineering drawing	B. D. Kataria Sons , Ludhiana
2	Gurcharan singh, Subash chander	Civil Engineering Drawing	Standard Publishers Distributors, Delhi
3	R. S. Malek G. S. Meo	Civil Engineering Drawing	New Asian Delhi
4	B. H. Shukla	Civil Engineering Drawing	Atul Prakashan Ahmedabad
5	Urban Development Authority	Building Bye laws	Local Authority like AUDA

B. List of Major Equipment/ Instrument:

Drawing board, mini drafter, other manual drawing instruments

C. List of Software/Learning Websites:

Auto CAD, Zwcad, civil Architect, draw plus X5

www.Autodesk.com,

www.drawingnow.com

www.learn-to-draw.com

9. CURRICULUM DEVELOPMENT COMMITTEE

Faculty Members From Polytechnics

1. **Prof. Bhavesh Modi** Principal B V P I T (DS) Umrakh Ta. Bardoli
2. **Mrs. A N Pamnani** L C E B B I T V V Nagar
3. **Mrs. Rina Chokshi** L C E P I E T (DS) Limda Vadodara

Co-ordinator and Faculty Member from NITTTR Bhopal

1. **Dr. J.P.Tegar**, Professor Dept of Civil and Environmental Engg.