



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Diploma of Vocation (D.Voc), 4th Semester

Branch: Architecture Assistantship

Subject Name: Building Services - I

Subject Code: 1240602

Type of course: Core

Focus:

To introduce students to various services and to sensitize them with respect to their integration into architectural design.

Teaching and Examination Scheme:

Teaching Scheme			Credit	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
			ESE (E)	PA (M)	ESE (V)	PA (I)		
3	0	0	3	50	0	0	0	50

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

Content:

Sr. No.	Contents:	Teaching Hour	% Weightage
A	Water Supply		
1	Sources of water <ul style="list-style-type: none"> • Selection of water • Conveyance of water • Water distribution methods • Water distribution systems • Connections with municipal supply line (ferrule – saddle connection) Demand of water <ul style="list-style-type: none"> • Factors of affecting demand of water • Consumption of water per capita per day for different types of buildings Plumbing System <ul style="list-style-type: none"> • Elements of plumbing systems • Types of pipes, fittings and fixtures 	15	40
2	Introduction to layout of water treatment plant Calculation for water storage unit (underground and overhead water tank) of a small unit	6	10
B	Waste Disposal		
3	Sullage Introduction and definition of sullage and sewage, night soil, garbage, storm water Types of traps, inspection chamber, manhole System of plumbing Sewage Introduction of sewage treatment plant Sanitary pipes, fittings, and fixtures	5	10



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4	Theory of sewage disposal Septic tank Soak pit	5	15
5	Layout of house design for a residential unit Layout of Toilet design for a residential unit	11	25
Total		42	100

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks				
R Level	U Level	A Level	N Level	E Level
5	20	15	5	5

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate and above levels (Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers.

The actual distribution of marks in the question paper may vary slightly from above table.

References:

- Arthanari S., Building Technology & Valuations, *Tata McGraw-Hill*
- Birdie G.S, Water Supply & Sanitary Engineering, Dhanpat Rai, 1992
- Bureau of Indian Standard, National Building Code, (New Delhi), BIS Bureau of Indian Standards
- F.Halls, Building Services, Routledge
- Rangwala-Public Health Engineering, Charotar
- McGuinness William J., Mechanical & Electrical Equipment for Building, Wiley
- Rao B.V.S.-Operation & Maintenance of Electrical Equipment, Asia Publishing House

Course Outcomes:

Sr. No.	CO Statement	Marks % weightage
1	To understand Sources, demand & elements of the system, layout and design of system, connections with municipal supply at City level.	25
2	To learn Lay out for water supply, drainage calculations for storage units e.g. underground and terrace tanks for a small unit.	25
3	To study Sullage and sewage.	10
4	To understand Various systems of waste removal and disposal.	15
5	To learn layout design of toilet for a small unit.	25

Projects:

Study and documentation of a small unit.

Method:

Drawings, presentation, site visits