



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Diploma of Vocation (D.Voc), 5th Semester

Branch: Architecture Assistantship

Subject Name: Building Services-II

Subject Code: 1250602

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:	Hrs	Module % Weightage
A	Electrical Services: Building Electrical Services		
1	<ul style="list-style-type: none">Importance of electrical services in building, introduction to commonly used terminology.Basic understanding of supply and distribution of electricity to buildings. - Internal supply and distribution	6	14
2	<ul style="list-style-type: none">Brief description of various types of wiring – casing and capping wiring, cleat wiring, batten wiring, conduit wiring.	6	14
3	<ul style="list-style-type: none">House wiring system – wire type, thickness, color, earthing, distribution of power.Protective devices – fuses, MCB, ELCB, etc.	6	14
4	<ul style="list-style-type: none">Various types of electrical lamps Incandescent, fluorescent / CFL, HID's, neon lamps and their lighting characteristics.Design considerations for different types of occupancies and task lighting.	6	14
B	Mechanical Services - Air conditioning, Mechanical Circulation		
5	<ul style="list-style-type: none">Types of air conditioning systems – window AC, portable AC, wall hung split AC and ducted AC.Air Distribution system – mixing ventilation, displacement ventilation, diffuse ceiling ventilationDucts – sheet metal, fiberboard, fiberglass, flexible duct,Air outlets, vents.	8	20
6	<ul style="list-style-type: none">Residential and commercial air conditioning, installation of air conditioningBasic understanding of its capacity and requirement, and loads working on it.	6	14
7	<ul style="list-style-type: none">Types of Elevators (Hydraulic, Traction, machine room less, vacuum)	4	10
	Total	42	100



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References

- Arthanari S.- Building Technology & Valuations
- Birdie G.S.-Water Supply & Sanitary Engineering
- Bureau of Indian Standard-National Building Code, (New Delhi)
- F.Halls-Building Services
- Rangwala-Public Health Engineering
- McGuinness William J.- Mechanical & Electrical Equipment for Building
- Rao B.V.S.-Operation & Maintenance of Electrical Equipment

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
5	10	15	5	5	10

Suggested Specification table with Marks (Theory):

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

Course Outcomes:

Sr No	CO Statement	Marks % weightage
1	To understand the application of electrical services in building industry.	20
2	To know electrical components and its use.	20
3	To Understand the different types of wiring system and their components used in electrical layout.	20
4	To understand the importance and components of mechanical services in building industry.	30
5	To develop the technical skills applied in building industry in mechanical services.	10

Projects:

Study and documentation of a small unit.

Method

Drawings, presentation, site visits

Laboratory Work:

Visit to Electric lab and mechanical lab.

List of Open-Source Software / Learning website:

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

- 1) <https://geda.gujarat.gov.in>
- 2) <https://www.mgvcl.com>
- 3) <https://powergrid.in>
- 4) <https://ceiced.gujarat.gov.in>>rules
- 5) <https://www.otis.com>