

5109 – BUILDING SERVICE & MAINTENANCE									
Teaching Schedule Per Week			Progressive Assessment		Examination Schedule (Marks)				
Lectures	Practical	Credits			Theory		Practical Ex.		Total
3	1	4	25	-	3 Hrs	100	-	-	125
Pre-requisite		Source	Semester	Theory	Test	Total	TW	PR	Gr Total
NIL		ELL		-	-	-	75	-	75

Rationale: The curriculum gives the competency to the diploma engineers to communicate with skilled workers and their superiors in the matters related to building services. It also gives the basic knowledge in the field of planning and trouble shooting of these services. This competency will make Diploma Engineer to work as maintenance Engineer in industry, hotels and large building complex.

COURSE CONTENTS		Hrs	Mks
SECTION I			
1. AIR CONDITIONING & REFRIGERATION		10	20
Natural air conditioning.			
Ventilation – necessity, factors affecting ventilation, system of ventilation (natural, forced circulation).			
Air – conditioning- (a) principle of air conditioning & classification according to purpose, basic vapour compression, refrigeration cycle. Humidification & dehumidification system of air conditioning. (b) Component of A/c system including air distribution system. (c) control component, circuit diagram, operation & trouble shooting of A/c unit.			

2. PROTECTION AGAINST FIRE	6	12
Classification of fire (according to cause) important considerations in fire protection.		
Fire resisting materials and their properties.		
Fire fighting equipment – type & their suitability for particular type of fire. Testing of fire fighting equipment & operation.		
Care & precaution while handling fire.		
SECTION II		
3. ELECTRICAL DEVICES	11	24
Types of drive, control component, general specification, preventive maintenance & trouble shooting of the following devices.		
a) Elevators, b) mixer/grinder, c) Oven/drier, d) Fan/exhaust fan, e) washing machine		
4. SAFETY MEASURES	5	8
In electrical installation and treatment against shock.		
SECTION III		
5. WATER SUPPLY SYSTEM FOR BUILDING	7	16
Materials : types of materials commonly utilised : their identification, brief specification for procurement, their location and use.		
Pipe material : types (G.I., Rigid P.V.C.) their quality, standard sizes.		
Pipe fittings such as elbows, bends, reducer, union, dead-end plug; and pipe appurtenances such as bib, full-way valve, non-return valve.		
System of plumbing: General principles for layout of plumbing for a building, internal water distribution (from water meter up to consumption points within the building).		
Maintenance of water supply system: Repair of leaks and replacement of components.		
6. SEWAGE SYSTEM FOR BUILDINGS	7	16
Materials : Types of material commonly utilised: their identification, brief specification for procurement, their location and use.		
Pipe material : types (A.C., C.I., S.W., Rigid P.V.C.) their quality, standard sizes.		
Appurtenances such as traps (P,S,Q, gully, & floor traps): their location & function.		
Inspection chamber : location and utility.		
Common sanitary fittings : their identification & use.		
Systems of plumbing : General principles for layout of plumbing for a building; single stack system and double stack system; anti-siphonage measures,		
Maintenance of plumbing system : repair of leaks and blocks in pipes.		
7. SPECIAL DEVICES	2	4
Domestic water meter: its location and function.; Fire hydrant: its utility, location and standard type; Pressure filters: its utility, general working operation.		
Total	48	100

PRACTICALS:

4 Demonstration is to be carried by the teacher of each section is related field.

REFERENCE BOOKS:

1. Water supply and sanitary Engineering (Environmental Engineering) by S.C. Rangwala.
2. Water supply and sanitary Engineering by G.S. Birdie & J.S. Birdie
3. Refrigeration and Air-conditioning by R. K. Rajput.
4. How to repair small appliances by J. Darr.
5. Study of electrical Appliances and devices by K. B. Bhatia.
6. Servicing Electrical Appliances Vol. I & II by National Radio Institute(TMH)