

GANPAT UNIVERSITY										
FACULTY OF ENGINEERING & TECHNOLOGY										
Programme		Diploma Engineering				Branch		Civil Engineering		
Semester		VI				Version		1.0.0.0		
Effective from Academic Year			2020-21			Effective for the batch Admitted in			July 2018	
Subject code		1CI2605		Subject Name		BUILDING SERVICES				
Teaching scheme					Examination scheme (Marks)					
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total	
	L	TU	P	TW						
Credit	3	0	1	0	4	Theory	40	60	100	
Hours	3	0	2	0	5	Practical	30	20	50	

Pre-requisites:
The Student have to know about basic of Building Construction and Advance construction technology.

Course Learning Outcomes:
The course content should be taught and implemented with an aim to develop different skills leading to the achievement of the following competencies and course learning outcomes: CO1. Manage building services provisions in big construction sites CO2. Identify the building services for the requisite functional requirement. CO 3. Synchronize the construction activities with installation of building services. CO 4. Ensure green building applications to the new constructions & execute the relevant system for lighting, ventilation and acoustics for building.

Course Content				
Name of UNIT	Unit Content	Unit Learning Outcomes	Marks	Hrs
UNIT – 1 OVERVIEW OF BUILDING SERVICES	1.1 Definitions 1.2 Objective and uses of building services 1.3 Use of services for different types of building 1.4 Classification of building services 1.5 Types and Selection of services 1.6 Principles of lighting or requirement 1.7 Necessity of Ventilation 1.8 Types of Ventilation	1a. Describe about basics of building services 1b. Use various types of services as per requirement of building 1c. Apply Lighting and Ventilation provisions	10	8
UNIT – 2 ELECTRICAL SERVICES	2.1 Technical terms and symbols for electrical installations. 2.2 Electrical accessories of wiring 2.3. System of wiring. 2.4 Types of wires based on insulation 2.5 Various Electrical layout for buildings.	2a. Prepare various installation and accessories used in electrical services. 2b.Prepare Electrical layout for given building.	15	10

UNIT – 3 MECHANICAL SERVICES	3.1 Introduction of Mechanical Services. 3.2 Lift or Elevators 3.3 Escalators 3.4 Dumbwaiters 3.5 Conveyors 3.6 Air-conditioning	3a. Identification of services like lift, dumbwaiters, elevators , conveyors and Escalators. 3b. Planning of various mechanical services in building. 3c. Selection of type of air conditioning system as per requirement.	18	12
UNIT – 4 FIRE SAFETY	4.1 Introduction about fire protection. 4.2 Causes and Effect of Fire. 4.3 Fire Hazard and Fire load 4.4 General Requirements of Fire Resisting building as per IS and NBC 2005 4.5 Distinctive of Fire resisting Materials. 4.6 Fire Detection and Extinguishing systems.	4a. Identification of Fire Services. 4b. Select the relevant system of fire safety for the given building. 4c. Select the suitable type of Fire safety.	5	5
UNIT – 5 ACOUSTICS AND SOUND INSULATION	5.1 Introduction about basic of Acoustics. 5.2 Reflection of Sound. 5.3 Sound absorption and Acoustical Materials. 5.4 Noise Control in Residential Buildings.	5a. Introduction 5b. Requirement of good Acoustic. 5c. Various sound absorbent. 5d. Factors to be followed for noise control in residential building.	5	5
UNIT – 6 MISCELLANEOUS SERVICES AND GREEN BUILDING	6.1 Rain Water Harvesting. 6.2 Introduction of Grey water 6.3 Treatment systems for Grey water 6.4 Components and Management of Grey water system 6.5 Green Building	6a. Rain water Harvesting for buildings 6b. Concept of GREEN buildings. 6c. Introduction and Significance to Grey water.	7	5
		Total	60	45

List of Practical		
No.	Unit	Name of Practical
1	II	Prepare electrical layout plan for given building
2	VI	Prepare rain water harvesting layout plan for a building
3	III	Prepare Lift standards as per norms
4	V	Suggest noise control methods for a given commercial complex
5	IV	Prepare a plan for fire safety measures for a given multi story building
6	III	Identify proper locations for Lift/ Escalator/ Elevator in a given commercial complex
7	VI	Prepare a grey water management for a residential complex

Site Visit	
1	Visit a residential building & commercial building under construction and prepare layout for electrical, water supply, sanitary and related allied services of civil engineering and prepare site visit detailed report

Seminar	
1	Topic of seminar shall be given to a group of students not more than three . The students are required to submit and present / defended the seminar in the presence of students and teachers and the report including power point presentation to be attached with submission

List of Reference Books			
No	Title of Reference Books	Authors	Publication
1	Building Construction	Dr. B. C. Punmia	Laxmi Publications (P) Ltd., New Delhi
2	Building Construction	P. C. Varghese	PHI Learning (P) Ltd., New Delhi

List of Reference Books			
No	Title of Reference Books	Authors	Publication
1	Building Services	S. M. Patil	Seema Publication, Mumbai Revised edition
2	National Building Code of India - 2005	Bureau of Indian Standards	BIS, New Delhi

Link of Learning Web Resource	
1	www.nptel.iitm.ac.in
2	www.academia.edu