

GANPAT UNIVERSITY									
FACULTY OF ARCHITECTURE DEISGN & PLANNING									
Programme	Bachelor of Architecture				Branch/Spec.	INSTITUTE OF ARCHITECTURE			
Semester	IV				Version	2.0.0.0			
Effective from Academic Year		2020-21			Effective for the batch Admitted in			June 2019	
Subject code	2IVA05BS		Subject Name		Building Services-II				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab.)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	2	-	-	-	2	Theory	40	60	100
Hours	2	-	-	-	2	Practical	-	-	-
Pre-requisites:									
Introduction to all basic Mechanical system of buildings,to understand the co relation of services with building to run the services smoothly.									
Learning Outcome:									
LO1:Understand the networking of all mechanical components of including to understand the working cycle to be generated through the usage of equipment and appliances									
LO2: Apply acquired knowledge to importance of natural and artificial lighting ,resources for the both types of lighting arrangement which are the most important requirement of the built environment									
LO3:To adapt newer and latest technology and equipment's for modern and fundamental requirement of Information and communication									
LO4: High tech applications and services to be implemented for all type of functional areas like residential, commercial, corporate and Industrial.									
Theory syllabus									
Unit	Content								Hrs
1	Acoustics Properties of sound, process of hearing, behavior of sound, acoustics for various spaces/ functional areas, noise control, outdoor and indoor sound input/output systems, noise control of building materials, prediction methods and calculations, noise reduction, properties of materials for sound insulation, testing, room acoustics, reverberation time in functional areas.								08
2	Air conditioning Different systems in current use from chilled water cooling systems to air handling package unit etc; their installations requirements and demand in building layouts. Supply air, return air ducting systems, their layouts and requirements along with building systems.								08

3	<p>Building Automation</p> <p>Concept and application of Automation and Management System; Design issues related to building automation and its effect on functional efficiency; Components of building automation system; HVAC, electrical, lighting, security, fire-fighting, communication etc.; Integrated approach in design, maintenance and management system; Current trend and innovation in building automation systems; Impact of Information Technology; Concept of artificial intelligence; Application of expert system in building automation; Stages in development of expert system, expert system application in architecture; Computerizing building management information.</p>	10
4.	<p>Building Security Systems</p> <p>Concept of Building security Systems; Design issues, Components, Integrated approach in design, maintenance and management, Current trend and innovation, Application.</p>	06
Practical content		
Site visits & Case studies for Acoustics , Building Automation system , Building security system. Market surveys of types of Air conditioning system available in the market with its proper working criteria and functions and also add the upgradation coming in the system.		
Text Books		
1	NA	
Reference Books		
2	Mechanical & Electrical Equipment for Building - William J. McGuiness & others	
3	Operation & Maintenance of Electrical Equipment - B.V.S.Rao	
4	Basics Room Conditioning - Klein	
4	Intelligent Buildings and Building Automation - Shengwei Wang	
5	Understanding Building Automation System - Reinhold A. Carlson	