GUJARAT TECHNOLOGICAL UNIVERSITY

DIPLOMA IN ARCHITECTURAL ASSISTANTSHIP

SEMESTER: V

Subject Name: **Building Services - II**

Sr. No.	Course Content
1.	**Ventilation and Air Conditioning:** 1.1. Definition of ventilation and its necessity. 1.2. Functional requirements of ventilation system. 1.3. Systems of Ventilation - Natural/Mechanical, i.e. exhaust, air supply and combined. 1.4. Essentials of good ventilating system.
2.	**Air Conditioning:** 2.1 Definition 2.2 Purpose 2.3 Classification of air conditioning • Comfort A.C. • Industrial comfort • Summer, winter Air Conditioning. 2.4 Principles of comfort air conditioning • Temp. control, • air velocity control, • Humidity control. 2.5 Systems of air conditioning, • Central System, • Self contained system unit • Combined system.
3.	**Thermal Insulation of Building:** 3.1 Principles of thermal insulation and advantages of thermal insulation. 3.2 List of insulating materials. 3.3 Methods of heat insulation. • Insulation of roofs. • Exposed walls, windows, doors and ventilators.
4.	**Accoustics:** 4.1 General discussion. 4.2 Characteristics of audible sound. • Frequency of pitch. • Intensity of loudness of sound. • Measurement of sound. • Principles of acoustics. • Behavior of sound and its effect. 4.3 Acoustical defects • Formation of echoes. • Reverberation. • Reverberation time.

	• Optimum time of reverberations. • Dead spot. • Sound foci. 4.4 Insufficient loudness and external noise. 4.5 Sound absorbent materials and their classification. 4.6 Requirements and conditions of good acoustics. 4.7 General Principles in acoustical design • Site selection. • Volume. • Space. • Treatment of interior. • Surface. • Reverberation. • Sound absorption. • Seats & seating arrangement.
5.	**Sound Insulation of Buildings:** 5.1 Transmission of noise. 5.2 Maximum acceptable noise level. 5.3 Means of noise central and sound insulation. 5.4 Constructional measures of noise control. • Walls & partitions. • Floor covering. • Windows and doors insulation. • Sanitary fittings. • Insulation of machinery used in acoustics and their application.
6.	**Movements:** 6.1 Electrical lifts, lift wall, lift doors and gates and their detail with machine room with detailed sketch. 6.2 Escalators, (types) Space required and approaches. 6.3 Ramps for different purposes, space & location for ramps.

Term Work

Term should be based on above topics.

Reference Books:

1. Building Construction, S.P. Arora & Bindra.
2. Building construction, Gurucharan Singh.
3. Building services, Vol. I & II, F. Hall.
4. Water supply & Sanitary, G.J. Kulkarni.
5. Water supply and Sanitary Engineering, R.S.Deshpande.