

## **Objective**

To develop know-how and understanding of important advanced systems and services in buildings, their definitions and terms used, functioning and their applications in building.

### **Module 1**

#### **FIRE SAFETY**

Classification of Fires & Extinguishers, Dry Riser, Wet Riser & Down Comer systems, Sprinkler & Drencher systems, Fire detection systems, Fire Lifts & Fire Escape Plan, Fire prevention, safety and security measures and regulations.

Fire fighting layout, Reflected ceiling plan of smoke detectors / sprinklers, etc.

### **Module 2**

#### **PARKING AND CIRCULATION SYSTEMS**

Multilevel Parking Systems, Semi automatic and automatic parking systems, Elevator types and spatial requirements with respect to Passenger, Service & Fire lifts, Escalators and Travelators, Applications of Raised Floor systems.

### **Module 3**

#### **BUILDING UTILITIES**

Building Automation – Objectives & advantages, Smart devices used in Illumination, Climate control, Building Security systems etc., Laundry & Garbage chutes, Understanding Bio Medical Waste and their disposal, Chemical and Biological Toilets, Hot water systems for apartments and hotels, Cooking gas distribution system for residences. Communication systems: space and connection facilities for LAN, computer server, PABX and telephone.

### **Module 4**

#### **STANDARDS AND REGULATIONS**

Study of building services with reference to NBC (National Building Code), ECBC (Energy Conservation and Building Code) and BIS regulations (Bureau of Indian Standards).

### **Module 5**

Case studies and assignments for students on applications of building systems and services.

## **References**

1. Stein Reynolds Mc Guinness – Mechanical and Electrical equipment for buildings, Vols 1 & 2, John Wiley & sons.
2. Francisco Asensio Cerver – The architecture of Skyscrapers, Hearst Book International, New York, 1997
3. Bennetts Ian & others – Tall building structural systems
4. William, J. McG. (1971). Mechanical & Electrical Equipment for Buildings
5. Bovay, H. E. (1981). Handbook of Mechanical & Electrical systems for Buildings. McGraw-Hill Higher Education.

6. Bureau of Indian Standards. (2005). Code of Practice for Electrical Wiring Installations IS-732.
7. Kloft, E. and Johann, E. (2003). High-rise Manual: Typology and Design, Construction and Technology, 1st Ed. Basel: Birkhauser Verlag AG.
8. National Building Code
9. Energy Conservation and Building Code