

SUBJECT NAME – BUILDING SERVICES

SUBJECT CODE – 3336206

FOCUS:

To introduce students to various services and to sensitize them with respect to their integration into Architectural Design.

CONTENTS:

- **SERVICES**

- **PART 1 - ELECTRICITY**

- Importance of electrical services in building, introduction to commonly used terminology.
- Basic understanding of supply and distribution of electricity to buildings – transformer alternator (introductory part), low tension panels, generators and overhead versus underground distribution systems, panel boards etc.,
- Internal supply and distribution – brief description of various types of wiring, conduit, PVC casing and capping wiring systems; House wiring- wire thickness, color codes usages, Distribution of power to various appliances
- UPS & Inverters: Necessity & precautions, Online and & Offline uninterrupted power supplies, Types of batteries used.
- Earthing, Protective devices – fuses, MCB, ELCB, lightning arrestor
- Indian Electricity Rules – Relevant codes of Practice

- **PART 2 - LIGHTING**

- Quality and quantity of light;
- Methods and types of lighting ambient, task and accent lighting.
- Systems of luminaries: direct, indirect etc.,
- Various types of electrical lamps – incandescent, fluorescent / CFL, HID's, neon lamps and their lighting characteristics.
- Design considerations for different types of occupancies and task lighting.

- **PART 3 - AIR-CONDITIONING**

- Definitions, advantages and disadvantages, types of air conditioning systems summer. Air distribution system, ducts, air outlets, vents.
- Residential and commercial air conditioning, installation of air conditioning, energy conservation techniques to avoid load on air conditions.
- Basic understanding on its capacity and requirement, and loads working on it.

- **Part – 4 ELEVATORS (LIFTS) AND ESCALATORS**

- Brief History – types of elevators like counter weight and hydraulic elevators.
- Study of Passenger lift, hospital lift, goods lift, service lift or dumb waiters. Civil dimensions of hospital lift, goods lift, passenger lift, and service lift, definitions and components, lift location in building i.e. grouping of lift in building.
- Service requirement, passengers handling capacity. Architects role for installations of elevators or information to be provided by Architect to lift company.

- Escalators: Definition and components, types of Escalators, arrangements in building, Escalator V/s Elevators, capacity size and speed of escalators.
- Relationship of staircases and lifts and their location in plan.

- **PART 5 - FIRE**
- Types of fire, Causes of fire, fire safety in buildings planning stage, classification of building classification of fire zones, brief description of combustible and non-combustible materials in case of fire, fire rating, and fire escape routes and staircase design (NBC Code), active fire control using portable extinguishers, basic concepts in fixed firefighting installations, automatic fire detection and smoke alarm systems, wet risers.
- Rules for fire protection and firefighting requirements for high-rise buildings in India.

- Electrical Technology by H Cotton,
- Light right – TERI Manual
- Basic Electrical Engg. By Anwari
- Building Construction – Sushil Kumar
- Building construction by McKay
- Building construction by Frank Ching