

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL

New Scheme Based On AICTE Flexible Curricula

Civil Engineering, VII-Semester

Open Elective CE 703(D) Building Services

UNIT I -

Importance of building services, types of services required in building complexes. Planning of services, organization structure of services role and administrative functions of supervisors, classification of building as per NBC. Water supply & distributions in high rise buildings, house connections system of water supply, water supply fixtures & appliances, swimming pool water treatment, algae control in swimming pool.

UNIT II – Lift & Escalator

Anatomy of lift provision in lift, classification of lift, types of lifts, types of operation of lifts. lift codes & rules, traffic analysis and selection of lift, types of lift control, structural provisions of lift and buildings, fire safety provisions in lifts, work done and lift installation by owner, details of information to be given to lift supplier, Accidents in lifts and safety precautions, escalators, working mechanism, Travelators,

UNIT III – Fire-Fighting

Fire growth and behavior, classification of fire, fire triangle classification of building according to fire, classification of structural components, modes of fire, fire- extinguishers and their types of suitability, types of portable fire extinguishers, fire hydrants and their location, Carbon Di-oxide storing system , provisions in building from fire safety (IS 1641), Hydrants installation , fire lift , fire escapes, service duet escape route , fire detection systems their type and applications fire alarm systems, types and their working fire control systems.

UNIT IV – Acoustics and sound insulation and HVAC system

Noise, sources & their effects, Characteristics sound; Acoustical defects, Noise in building, Planning Noise rating Curve, Reverberation time, materials for acoustical treatment, requirement for good acoustics, general principles of caustics design, Acoustical design of auditorium, studio, open air theatre, Sound insulation of walls, ceiling floors.

Natural ventilation, Types of Ventilation systems, Types of air conditioning, principles of control air conditioning, system of air conditioning essentials of air conditioning system, Thermal insulation of walls & ceiling, methods of thermal insulation.

UNIT V – Miscellaneous Services

Building Security & access Control (Biometrics, voice recognition, Iris detector, smart card, Vascular pattern, fingerprint, contactless system etc), Design of car parking system, car park management Strategy , services for Disabled , Rain water harvesting, solar systems, green Building Concerns, Street lighting (Campus lighting), Land scaping & Horticulture, waste collection & reuse & recycling, package STP, use of IOT in building Services management, CCTV, Surveillance, refuse collection & Transportation