

AE523 **BUILDING SERVICES-III** (3-0-0)

(Illumination and electrical services)

Course objective:

This course focuses on the study of artificial lighting system and electrical lay out in buildings and the power distribution in towns and cities.

Module-1

Radiation, colour, eye vision, different entities of Illuminating systems, Lighting sources incandescent/electrical discharge, fluorescent, arc lamps and laser, luminaires, wiring switching, and control circuits. Law of illumination, illumination from point, line and surface sources. Photometry and spectrometry, photocells, environmental and glare.

Module-2

General Illumination design, interior lighting, industrial, residential, office departmental store, indoor stadium, theatre and hospital.

Exterior lighting –Flood, street, aviation and transport lighting, lighting for displays and signaling-Neon signs LED-LCD displays beacons and lighting for surveillance.

Module-3

General distribution of electric power in towns and cities. Substation for small schemes and industrial units, supply undertaking, meter room, electrical installation in buildings, connection with the supply company, mains and meter board installation from the meter board to individual units. Electrical wiring system, different material employed and specifications. Distribution boards lay out of points etc. Domestic electrical appliances, earthing for electrical appliances, electrical installation for services such as air conditioning systems, lifts, elevator and pumps. Selection of cable/wire sizes; potential sources of fire hazards and precautions. Emergency supply-stand by and UPS.

Bye laws pertaining to electrical installations. Application of lighting system for shops and shop window, Offices, class rooms and lecture hall, stage, auditorium etc. Illumination level required in each case, Electrical installation lay out for design project to be done.