SYNERGY SCHOOL OF ENGINEERING, DHENKANAL
LESSON PLAN
SESSION 2026-2027
DEPARTMENT OF CIVIL ENGINEERING

Discipline: Civil Engineering	**Semester:** 5th/W 2026	**Name of the Faculty: Kuhudi Biswal** **Email: kuhudibiswal789@gmail.com**
Subject: Building services & maintenance	**No. of Days/week:** 03	**Start Date:** 01/07/26 **End Date:** 05/11/26

Week	Class Day	Theory Topics
1st	1st	Introduction to the subject building services & maintenance.
	2nd	Classification of buildings as per National Building code, Necessity of building services
	3rd	Functional requirements of building, Different types of building services i.e. HVAC (Heat, Ventilation and Air Conditioning), Escalators and lifts
2nd	1st	Different types of building services i.e. fire safety, protection and control, plumbing services, rain water harvesting,
	2nd	Different types of building services i.e. solar water heating system, lighting, acoustics, sound insulation and electric installation etc.
	3rd	Different types of building services i.e. solar water heating system, lighting, acoustics, sound insulation and electric installation etc.
3rd	1st	Role and responsibility of Building Service Engineer
	2nd	Role and responsibility of Building Service Engineer
	3rd	Introduction to BMS (Building Management Services)
4th	1st	Introduction to BMS (Building Management Services)
	2nd	Role of BMS, concept of smart building.
	3rd	Role of BMS, concept of smart building.
5th	1st	Assignment copy checking and doubt clear session
	2nd	Introduction to Modes of vertical communication.
	3rd	Objectives and modes of vertical communication in building.
6th	1st	Lifts: Different types of lifts and its uses,
	2nd	Component parts of Lift- Lift Well, Travel, Pit, Hoist Way, Machine, Buffer,
	3rd	Component parts of Door Locks, Suspended Rope, Lift Car, Landing Door, Call Indicators, Call Push etc.
7th	1st	Design provisions for basic size calculation of space enclosure to accommodate lift services, Safety measures.
	2nd	Escalators: Different Types of Escalators and its Uses,
	3rd	Components of escalators, Safety measures.
8th	1st	Design provisions for basic size calculation of space enclosure to accommodate escalator services,
	2nd	Design provisions for basic size calculation of space enclosure to accommodate escalator services,
	3rd	Ramp: Necessity, design consideration

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9th	1st	Ramp: Necessity, design consideration, gradient calculation
	2nd	Layout and Special features required for physically handicapped and elderly
	3rd	Assignment copy checking and doubt clear session
10th	1st	Introduction to Fire Safety
	2nd	Fire protection requirements for multistoried building
	3rd	Causes of fire in building, Fire detecting and various extinguishing systems
11th	1st	Working principles of various fire protection systems.
	2nd	Safety against fire in residential and public buildings (multistoried building)
	3rd	National Building Code provision for fire safety
12th	1st	Fire resisting materials and their properties, Fire resistant construction
	2nd	Procedures for carrying out fire safety inspections of existing buildings, Provisions for evacuation.
	3rd	Introduction to plumbing services. Importance of plumbing, AHJ (Authority Having Jurisdiction) approval, Plumbing Terminology and fixtures
13th	1st	Terms used in plumbing, Different types of plumbing fixtures, shapes/ sizes, capacities, situation and usage, Traps, Interceptors.
	2nd	System of plumbing for building water supply.
	3rd	Storage of water, hot and cold-water supply system.
14th	1st	System of plumbing for building drainage: Types of drainage system such as two pipe system, one pipe system.
	2nd	System of plumbing for building drainage: types of Vents and purpose of venting
	3rd	System of plumbing for building drainage: Concept of grey water and reclaimed water.
15th	1st	Different pipe materials, and jointing methods, fittings, hanger, supports and valves used in plumbing and their suitability.
	2nd	Different pipe materials, and jointing methods, fittings, hanger, supports and valves used in plumbing and their suitability continuation.
	3rd	Assignment copy checking and doubt clear session. Semester question discussion.

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PREPARED BY

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