LESSON PLAN SUBJECT- APPLIED CHEMISTRY			
Discipline : Electrical /Mechatronics Engg.		**Semester: 2nd Sem**	**Name of the Teaching Faculty : Kuni Majhi**
Subject : TH.2b		**No. of Days / per week class allotted**	**Semester From date : 04.02.2025 To Date : 17.05.2025**
Month	**Week**	**Day**	**Topics**
FEBRUARY	**2nd**	**1st**	Graphical presentation of water distribution on Earth (pie or bar diagram). Classification of soft and hard water based on soap test
		4th	salts causing water hardness, unit of hardness and simple numerical on water hardness
	3rd	**1st**	Cause of poor lathering of soap in hard water, problems caused by the use of hard water in boiler (scale and sludge, foaming and priming, corrosion etc)
		4th	quantitative measurement of water hardness by ETDA method,total dissolved solids (TDS) alkalinity estimation.
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		4th	Water softening techniques – soda lime process
	5th	**1st**	Water softening techniques – zeolite process
		4th	Water softening techniques – ion exchange process
MARCH	**2nd**	**1st**	Municipal water treatment (in brief only) – sedimentation
		4th	Municipal water treatment (in brief only) – coagulation
	3rd	**1st**	Municipal water treatment (in brief only) – filtration, sterilization
		4th	Water for human consumption for drinking and cooking purposes from any water sources and enlist Indian standard specification of drinking water (collect data and understand standards).
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		4th	REVISION
	5th	**1st**	SURPRISE TEST
		4th	Polymers – monomer, homo and co polymers, degree of polymerization, simple reactions involved in preparation and their application
APRIL	**1st**	**4th**	Thermoplastics and thermosetting plastics (using PVC, PS, PTFE)
	2nd	**1st**	Thermoplastics and thermosetting plastics (nylon – 6, nylon-6,6 and Bakelite)
		4th	Rubber and vulcanization of rubber.

	3rd	**4th**	Unit 4: Chemistry of Fuels and Lubricants Definition of fuel and combustion of fuel, classification of fuels, calorific values (HCV and LCV), calculation of HCV and LCV using Dulong's formula.
	4th	**1st**	Proximate analysis of coal solid fuel petrol and diesel - fuel rating (octane and cetane numbers), Chemical composition, calorific values and applications of LPG, CNG, water gas, coal gas, producer gas and biogas.
		4th	Lubrication – function and characteristic properties of good lubricant, classification with examples, lubrication mechanism – hydrodynamic and boundary lubrication,
	5th	**4th**	physical proper- ties (viscosity and viscosity index, oiliness, flash and fire point, could and pour point only)
MAY	**1st**	**2nd**	chemical properties (coke number,total acid number saponification value) of lubricants.
	2nd	**1st**	REVISION
		4th	
	3rd	**4th**	