

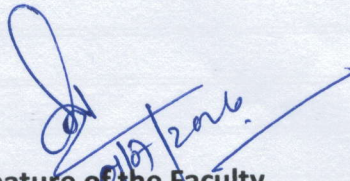
Lesson Plan
TH:1- PHYSICAL CHEMISTRY
3rd Semester FT- Winter 2026

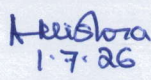
Name of the Faculty- BIPIN BIHARI MOHANTY

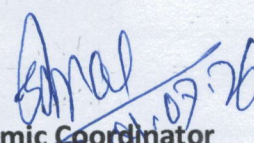
Date- 1ST JULY 2026

Unit I – PHYSICAL PROPERTIES OF LIQUIDS: (5 Classes)	
1	Intermolecular forces in liquid. Vapour pressure and its effect on temperature and boiling point.
2	Surface tension. Viscosity and measurement of viscosity by Ostwald method
3	Refractive index, specific refraction, determination of refractive index
4	Optical activity and measurement of optical activity
5	Solve simple problems based on physical properties of liquid
Unit II – SOLUTION: (10 Classes)	
6	Solution and Types of solutions.
7	Ways of expressing concentration.
8	Solve numerical related to concentration.
9	The solution of gases in gases.
10	Henry's law and solve numerical related to it.
11	Solutions of liquid in liquids.
12	Solubility of partially miscible liquids
13	Solubility of solid in liquid and equilibrium concept, solubility curve.
14	Raoult's Law, ideal solution and explain the lowering of vapor pressure and its measurement
15	Concept of elevation of boiling point and depression of freezing point
Unit III – OSMOSIS AND OSMOTIC PRESSURE.: (10 Classes)	
16	Osmosis and osmotic pressure with example.
17	Function of semi permeable membrane.
18	Osmotic pressure and isotonic solutions
19	The theories of Osmosis
20	Reverse osmosis.
21	The laws of osmotic pressure.
22	Solve the Simple Problems.
23	Solve the Simple Problems.

24	Relation between Vapor Pressure & Osmotic Pressure.
25	Relation between Vapor Pressure & Osmotic Pressure.
Unit IV – DISTRIBUTION LAW.: (5 Classes)	
26	Nernst's distribution law. Equilibrium constant from distribution coefficient
27	Extraction with a solvent, multiple extraction
28	Concept of liquid-liquid chromatography.
29	Applications of distribution law
30	Numerical based on distribution law.
Unit V – COLLOIDS.: (10 Classes)	
31	Colloids & types of colloidal systems
32	Characteristics of sols
33	The application of colloids.
34	Methods of preparation of sols & purification of sols.
35	The optical, kinetic and electrical properties of sols.
36	Emulsion and types of emulsion.
37	The role of Emulsifier.
38	The preparation of Emulsions and their properties
39	Gel, type of gel, properties and application.
40	Gel, type of gel, properties and application.
Unit VI – ADSORPTION: (5 Classes)	
41	Adsorption Compare absorption and adsorption
42	Types of adsorptions.
43	Physical adsorption and Chemisorption.
44	The application of adsorption
45	The Ion- exchange adsorption and discuss its application


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Lesson Plan
TH:2- FRUITS AND VEGETABLE TECHNOLOGY
3rd Semester FT- Winter 2026

Name of the Faculty- Anima Mishra

Date- 1st July 2026

Unit I – Physiology: (5 Classes)	
1	Classification & Nutritive value of fruits & vegetables
2	Classification & Nutritive value of fruits & vegetables.
3	Transpiration, respiration, ripening and their effects
4	Transpiration, respiration, ripening and their effects
5	Harvesting & processing of fruits & vegetables
Unit II – Storage of fresh fruits and vegetables: (5 Classes)	
6	Microbiology of fresh fruits and vegetables
7	Spoilage and its control
8	Principles and methods of storage-cold storage, atmosphere storage
9	gas storage, hypobaric storage, pre-cooling, radiation, waving etc
10	gas storage, hypobaric storage, pre-cooling, radiation, waving etc
Unit III – Processing: (10 Classes)	
11	Processing of vegetables: Potato chips,
12	French fries, frozen patties
13	sweet potato chips, flakes,
14	Tomato -juice, puree,
15	sauce, ketchup, chutney
16	Mushroom-freeze drying, pickles, dehydration
17	Processing of fruits: Jam, Jelly,
18	squash, marmalade
19	pickles, vinegar
20	pickles, vinegar
Unit IV – Preservation of fruits and vegetables: (10 Classes)	
21	Preserve fruits and vegetables by heat
22	Preserve fruits and vegetables by heat
23	Preserve fruits and vegetables by heat

24	Preserve fruits and vegetables by chemicals,
25	Preserve fruits and vegetables by chemicals,
26	Preserve fruits and vegetables by chemicals,
27	Preserve fruits and vegetables by sugar, salt,
28	Preserve fruits and vegetables by sugar, salt,
29	Preserve fruits and vegetables by fermentation, , drying
30	Preserve fruits and vegetables by fermentation, , drying
Unit V – Fermented fruit and vegetable products: (5 Classes)	
31	Definition of Fermented foods
32	Pickling and curing of foods
33	Pickling and curing of foods
34	Pickling and curing of foods
35	Pickling and curing of foods
Unit VI – Preparation of spices and condiment products: (5 Classes)	
36	Classification
37	Processing of spice and condiment products
38	Processing of spice and condiment products
39	Adulteration of spices
40	Adulteration of spices
Unit VII – Preparation of non-alcoholic beverage: (5 Classes)	
41	Processing tea, coffee, and cocoa and their products
42	Processing tea, coffee, and cocoa and their products
43	Processing tea, coffee, and cocoa and their products
44	Processing of fruit juices.
45	Processing of fruit juices.

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Lesson Plan
TH:3- FOOD NUTRITION
3rd Semester FT- Winter 2026

Name of the Faculty- Anima Mishra

Date- 1ST JULY 2026

Unit I – Food & our Body: (10 Classes)	
1	Introduction to food and nutrients
2	Functions of foods
3	Functions of foods
4	Basic food groups
5	Energy metabolism
6	Specific Dynamic action
7	Nutritive value of foods
8	Calorific value of foods
9	Calorific value of foods
10	Recommended dietary allowances for Indians.
Unit II – Menu Planning & Meal Preparation: (10 Classes)	
11	Developing good eating habits.
12	Developing good eating habits.
13	Food misinformation
14	Food misinformation
15	Menu planning for the family.
16	Menu planning for the family
17	Menu planning for the family
18	Menu planning for hospital settings.
19	Menu planning for hospital settings.
20	Menu planning for hospital settings.
Unit III – Balanced diet and Nutrition during normal life cycle: (10 Classes)	
21	Balanced diet.
22	Balanced diet.
23	Diets during a normal life cycle.
24	Diets during a normal life cycle.

25	Nutrition during pregnancy
26	Nutrition during pregnancy
27	Nutrition during lactation
28	Nutrition during lactation
29	Nutrition from infancy to adolescence.
30	Ways of measuring growth.
Unit IV – Assessment of Nutritional status: (10 Classes)	
31	Nutritional assessment of a community
32	Methods of assessment of nutritional status
33	Nutrition surveys.
34	Nutrition surveys.
35	Diet surveys.
Unit V – Malnutrition and Nutrition programmes.: (10 Classes)	
36	Causes and consequences of malnutrition in India.
37	Causes and consequences of malnutrition in India.
38	Protein Energy Malnutrition
39	Protein Energy Malnutrition
40	Vitamin Deficiency
41	Deficiency of minerals
42	Deficiency of minerals
43	Current Nutrition programme in India.
44	Food fortification, food enrichment
45	food enrichment, food restoration.

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Lesson Plan
TH:4- FOOD ENGINEERING-1
3rd Semester F.T- Winter 2026

Name of the Faculty- Sriya Suman Patro

Date-1ST JULY 2026

Unit I – Introduction : (5 Classes)	
1	General introduction to food technology
2	Principles of food preservation
3	Principles of food preservation
4	Methods of food preservation
5	Methods of food preservation
Unit II – Preservation and Processing by heat: (10 Classes)	
6	Effect of Heat on Micro-organisms
7	Effect of Heat on Micro-organisms
8	Thermal Death Time (TDT) Curve
9	Thermal Death Time (TDT) Curve
10	Environmental factors
11	Environmental factors
12	Canning
13	Canning
14	Pasteurization & Sterilization
15	Pasteurization & Sterilization
Unit III – Preservation and Processing by Cold: (5 Classes)	
16	Effect of cold on micro-organism
17	Effect of cold on micro-organism
18	Types of cold preservation
19	Types of cold preservation
20	Study & construction of cold storage
Unit IV – Dehydration and Concentration: (5 Classes)	
21	Advantages of drying and drying rate
22	Changes during drying
23	Methods of drying

24	Intermediate moisture foods
25	Methods of concentration
Unit V – Fermentation: (5 Classes)	
26	Fermentation & benefits of fermentation
27	Microbial activities in foods
28	Microbial activities in foods
29	Control of fermentation in foods
30	Control of fermentation in foods
Unit VI – Food irradiation: (5 Classes)	
31	Kinds of ionizing radiations
32	Kinds of ionizing radiations
33	Radiations effects.
34	Radiations effects.
35	Uses of radiations
Unit VII – Food Preservatives: (5 Classes)	
36	Classification of food preservatives (class 1 and 2)
37	Salt: Mechanism of action, food pickling and curing
38	Sugar: Types, uses and mechanism of action against micro- organisms
39	Chemical preservatives: importance and mechanism of action of benzoic acid
40	KMS, Sodium benzoate
Unit VIII – Food packaging: (5 Classes)	
41	Introduction to Food packaging
42	Importance and function of food packaging.
43	Importance and function of food packaging.
44	Study types of rigid and flexible packaging
45	Study types of rigid and flexible packaging

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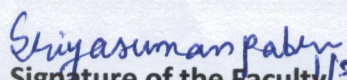
Lesson Plan
TH:5- FLUID MECHANICS
3rd Semester FT- Winter 2026

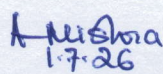
Name of the Faculty- Sriya Suman Patro

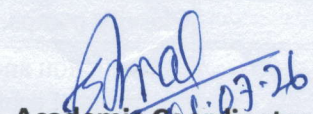
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Unit I – INTRODUCTION TO FLUID STATICS: (5 Classes)	
1	Classify fluid, Properties of fluid
2	Newton's Law of viscosity
3	Differentiate Newtonian & Non-Newtonian fluid
4	Derive an equation of pressure head.
5	Derive an equation of pressure head.
Unit II – FLUID FLOW PHENOMENA AND FLUIDISATION: (6 Classes)	
6	Types of flow. Reynolds's experiment
7	Mechanism of fluid flow in pipes. Derived Bernoulli's theorem
8	Friction factor and estimate friction loss in pipes
9	Fluidization.
10	Pressure drop equation in fluidized bed.
11	Fluid flow characteristic in packed bed.
Unit III – FLUID FLOW PHENOMENA AND FLUIDISATION: (10 Classes)	
12	Flow measurement and Transportation of fluid
13	Fluid flow through orifice meter, venture meter and derive an expression for flow measurement, solve simple problems on it.
14	Construction and working of rotameter
15	Differentiate pipe and tube
16	Standard pipe fittings
17	Construction and operation of different types of valves
18	Construction and operation of different types of valves
19	Classify pumps.
20	Construction and operation of centrifugal pump.
21	Construction and operation of centrifugal pump.
Unit IV – CONDUCTION: (7 Classes)	

22	Heat low concept in conduction
23	Steady state and unsteady state conduction
24	Fourier's law of conduction
25	Derive an equation of hear flow in a composite wall and a cylinder.
26	Optimum thickness of insulation
27	Solve problems on conduction
28	Solve problems on conduction
Unit V – CONVECTION: (7 Classes)	
29	Classify convection
30	Heat flow phenomenon in convection
31	Derive equation of individual and overall heat transfer co-efficient
32	Different dimensionless no. used in convection and discuss different empirical equation on heat flow by convection.
33	Different dimensionless no. used in convection and discuss different empirical equation on heat flow by convection.
34	Parallel, co-current and counter current flow.
35	Log mean temperature difference.
Unit VI – HEAT EXCHANGERS AND EVAPORATORS: (10 Classes)	
36	Classify heat exchanger
37	Construction and working of single pass, and multi pass, shell and tube heat exchangers
38	Construction and working of single pass, and multi pass, shell and tube heat exchangers
39	Energy balance for shell and tube heat exchanger and solve problems.
40	Energy balance for shell and tube heat exchanger and solve problems.
41	Classify evaporator
42	Construction and operation of different types of evaporators
43	Construction and operation of different types of evaporators
44	Solve simple material balance and energy balance problems
45	Solve simple material balance and energy balance problems


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