

Agnihotri College of Pharmacy, Wardha

Teaching Plan 2022-2023

Name of the Faculty: Ms. Khushbu B. Vyas

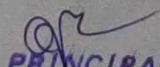
Subject: Instrumental Methods of Analysis

Semester: VII

From 18/07/2022 to 26/11/2022

Unit	Topic	Subtopic	No. of Hours	Date	Teaching Tool Used
I	UV Visible spectroscopy	<ul style="list-style-type: none"> Electronic transitions, chromophores, auxochromes spectral shifts, solvent effect on absorption spectra, 	3	20/07/2022	Digital board
		<ul style="list-style-type: none"> Beer and Lambert's law, Derivation and deviations. 	1	To	
		<ul style="list-style-type: none"> Instrumentation - Sources of radiation, wavelength selectors, sample cells detectors- Photo tube, Photomultiplier tube, Photo voltaic cell, Silicon Photodiode. 	4		
		<ul style="list-style-type: none"> Applications - Spectrophotometric titrations, Single component and multi component analysis 	1	30/08/2022	
	Fluorimetry	<ul style="list-style-type: none"> Theory, Concepts of singlet, doublet and triplet electronic states, internal and external conversions factors affecting fluorescence, quenching, instrumentation and applications 	2	01/09/2022	Digital board
			2	To	
			1	13/09/2022	
	IR spectroscopy	<ul style="list-style-type: none"> Introduction, fundamental modes of vibrations in poly atomic molecules sample handling, factors affecting vibrations Instrumentation - Sources of radiation, wavelength selectors, detectors - Golay cell, Bolometer, Thermocouple, Thermister, Pyroelectric detector and applications 	2	15/09/2022	Digital board and PPT
			2	To	
			6	27/09/2022	
	Flame Photometry	<ul style="list-style-type: none"> Principle, interferences Instrumentation and applications 	1	28/09/2022	Digital board and PPT
	Atomic absorption spectroscopy	<ul style="list-style-type: none"> Principle, interferences Instrumentation and 	2	30/09/2022	Digital board and




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		applications		03/10/2022	PPT
	Nepheloturbidometry	<ul style="list-style-type: none"> Principle, instrumentation and applications 	2	4/10/2022 To 6/10/2022	Digital board and PPT
III	Introduction to chromatography Adsorption and partition column chromatography-	<ul style="list-style-type: none"> Methodology, advantages, disadvantages and applications. 	4	10/10/2022 To 13/10/2022	Digital board and PPT
	Thin layer chromatography	<ul style="list-style-type: none"> Introduction, Principle, Methodology Rf values, advantages, disadvantages and applications. 	2 1	17/10/2022 To 19/10/2022	Digital board and PPT
	Paper chromatography	<ul style="list-style-type: none"> Introduction, methodology, development techniques, advantages, disadvantages and applications 	2 1	20/10/2022 To 31/10/2022	Digital board and PPT
	Electrophoresis	<ul style="list-style-type: none"> Introduction, factors affecting electrophoretic mobility Techniques of paper, gel, capillary electrophoresis, applications 	1 2	01/11/2022 To 03/11/2022	Digital board and PPT
	Gas chromatography	<ul style="list-style-type: none"> Introduction, theory, Instrumentation, derivatization Temperature programming, advantages, disadvantages and applications 	3 1	07/11/2022 To 10/11/2022	Digital board and PPT
	High performance liquid chromatography (HPLC)	<ul style="list-style-type: none"> Introduction, theory Instrumentation Advantages and applications. 	1 2 1	11/11/2022 To 15/11/2022	Digital board and PPT
	Ion exchange chromatography-	<ul style="list-style-type: none"> Introduction, classification, ion exchange resins, properties Mechanism of ion exchange process, factors affecting ion exchange Methodology and applications 	3 1 1	16/11/2022 To 22/11/2022	Digital board and PPT
	Gel chromatography	<ul style="list-style-type: none"> Introduction, theory, instrumentation and applications 	2	22/11/2022 To 23/11/2022	Digital board and PPT
	Affinity chromatography	<ul style="list-style-type: none"> Introduction, theory, instrumentation and applications 	2	23/11/2022 To 24/11/2022	Digital board and PPT



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Teaching Plan
2022-2023

Name of the Faculty: Prasad P. Jumade

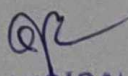
Subject: Pharmaceutical Analysis I

Semester: B. Pharm- I semester

From 28/12/2022 To 31/03/2023

Unit	Topic	Subtopic	No. of Hours	Date	Teaching Tool Used
I	Pharmaceutical analysis	i) Different techniques of analysis	01	28/12/2022	Digital Board and PPT
		ii) Methods of expressing concentration	01	To	
		iii) Primary and secondary standards.	01	30/12/2022	
		iv) Preparation and standardization of various molar and normal solutions- Oxalic acid, sodium hydroxide, hydrochloric acid, sodium thiosulphate, sulphuric acid, potassium permanganate and ceric ammonium sulphate	03	03/01/2023 & 04/01/2023 (extra) To 05/01/2023	Digital Board and PPT
	Errors	Sources of errors, types of errors, methods of minimizing errors	01	06/01/2023	Digital Board and PPT
		accuracy, precision and significant figures	01	10/01/2023	Digital Board and PPT
		Pharmacopoeia, Sources of impurities in medicinal agents, limit tests.	02	12/01/2023 To 13/01/2023	Digital Board and PPT
II	Acid base titration	Theories of acid base indicators	02	17/01/2023 To 18/01/2023 (extra)	Digital Board and PPT
		classification of acid base titrations and theory involved in titrations of strongweak, and very weak acids and bases, neutralization curves	02	19/01/2023 & 20/01/2023	Digital Board and PPT




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Unit	Topic	Subtopic	No. of Hours	Date	Teaching Tool Used
	Non aqueous titration	Solvents, acidimetry and alkalimetry titration and estimation of Sodium benzoate and Ephedrine HCl	04	23/01/2023 (extra) & 24/01/2023 & 25/01/2023 (extra) & 27/01/2023	Digital Board and PPT
III	Precipitation titrations	Mohr's method, Volhard's	01	28/02/2023	Digital Board and PPT
		Modified Volhard's, Fajans method	01	31/01/2023	Digital Board and PPT
		estimation of sodium chloride	01	02/02/2023	Digital Board and PPT
	Complexometric titration	Classification, metal ion indicators, masking and demasking reagents, estimation of Magnesium sulphate, and calcium gluconate	02	03/02/2023 & 04/02/2023 (extra)	Digital Board and PPT
	Gravimetry	Principle and steps involved in gravimetric analysis	01	07/02/2023	Digital Board and PPT
		Purity of the precipitate: co-precipitation and post precipitation, Estimation of barium sulphate.	02	09/02/2023 To 10/02/2023	Digital Board and PPT
Basic Principles, methods and application of diazotisation titration		02	11/02/2023 (Extra) & 27/02/2023 (Extra)	Digital Board and PPT	
IV	Redox titrations	Concepts of oxidation and reduction	02	28/02/2023 & 02/03/2023	Digital Board and PPT
		Types of redox titrations (Principles and applications)	02	03/03/2023 To 04/03/2023 (extra)	Digital Board and PPT

Unit	Topic	Subtopic	No. of Hours	Date	Teaching Tool Used
		Cerimetry, Iodimetry, Iodometry	02	09/03/2023 To 10/03/2023	Digital Board and PPT
		Bromatometry, Dichrometry	02	14/03/2023 To 15/03/2023 (extra)	Digital Board and PPT
		Titration with potassium iodate	02	16/03/2023 To 17/03/2023	Digital Board and PPT
V	Electrochemical methods of analysis	Introduction, Conductivity cell,	01	21/03/2023	Digital Board and PPT
	Conductometry	Conductometric titrations, applications	01	23/03/2023	Digital Board and PPT
	Potentiometry	Electrochemical cell, construction and working of reference (Standard hydrogen, silver chloride electrode and calomel electrode) and indicator electrodes (metal electrodes and glass electrode)	02	24/03/2023 & 27/03/2023 (extra)	Digital Board and PPT
		methods to determine end point of potentiometric titration and applications	01	28/03/2023	Digital Board and PPT
Polarography	Principle, Ilkovic equation, construction and working of dropping mercury electrode	01	29/03/2023 (extra)	Digital Board and PPT	
	rotating platinum electrode, applications	01	31/03/2023	Digital Board and PPT	



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Teaching plan - 2022-23

Name of the Faculty: Prashant Wake

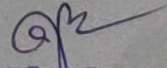
Subject: Physical Pharmacy-II

Semester: B.Pharm-IV Sem

From: 27/02/2022 to 12/04/2023

Unit	Topic	Subtopic	No. of hours	Date	Teaching tool
I	Colloidal dispersions	Classification of dispersed systems & their general characteristics, size & shapes of colloidal particles, classification of colloids & comparative account of their general properties.	4	27/2/23 2,3,4/2/23	Digital Board
		Optical, kinetic & electrical properties.	4	6,9,10,11/3/23	Digital Board
		Effect of electrolytes, coacervation, peptization & protective action.	4	13,14,15, 16/3/23	Digital Board
II	Rheology	Newtonian systems, law of flow, kinematic viscosity, effect of temperature	2	17,20/3/23	Digital Board
		non-Newtonian systems, pseudoplastic, dilatant, plastic,	2	21,23/3/23	Digital Board
		thixotropy, thixotropy in formulation,	2	24,25/3/23	Digital Board
		determination of viscosity, capillary, falling Sphere, rotational viscometers	2	27,31/3/23	Digital Board
		Deformation of solids	2	2,3/4/23	Digital Board
	Plastic and elastic deformation, Heckel equation, Stress, Strain, Elastic Modulus	1	5/4/23	Digital Board	
III	Coarse dispersion	Suspension, interfacial properties of suspended particles	2	6,10/4/23	Digital Board
		settling in suspensions, formulation of flocculated and deflocculated suspensions.	2	13,14/4/23	Digital Board
		Emulsions and theories of emulsification, microemulsion and multiple emulsions;	2	17,18/4/23	Digital Board
		Stability of emulsions, preservation of emulsions, rheological properties of emulsions and emulsion formulation by HLB method.	2	19,20/4/23	Digital Board
		IV	Micromeritics	Particle size and distribution, mean particle size, number and weight distribution, particle number, methods for determining particle size by different methods	4
counting and separation method, particle shape, specific surface, methods for determining surface area, permeability, adsorption,	4			25,26,27,28/4/23	Digital Board
derived properties of powders, porosity, packing arrangement, densities, bulkiness & flow properties.	2			29,30/4/23	Digital Board
V	Drug stability			Reaction kinetics: zero, pseudo-zero, first & second order, units of basic rate constants, determination of reaction order.	2




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		Physical and chemical factors influencing the chemical degradation of pharmaceutical product: temperature, solvent, ionic strength, dielectric constant, specific & general acid base catalysis,	3	4,6,7/5/23	Digital Board
		Simple numerical problems. Stabilization of medicinal agents against common reactions like hydrolysis & oxidation.	3	8,9,10/5/23	Digital Board
		Accelerated stability testing in expiration dating of pharmaceutical dosage forms. Photolytic degradation and its prevention	3	11,12,13/5/23	Digital Board




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