



Onkar Bahuuddeshiya Vikas Sanstha's
PROF. RAVINDRA NIKAM COLLEGE OF PHARMACY (B.Pharm)
 GONDUR DIST. DHULE, MAHARASHTRA

(Affiliated to KBC North Maharashtra University, approved by Govt. of Maharashtra, AICTE, Pharmacy Council of India)

Teaching Plan (Theory/Practical) Academic Year 2022-2023

Sub: Pharmacognosy and Phytochemistry-II - Year: Third Year (Sem- V) Total Hrs Prescribed (KBCNMU): 3Hrs/Week (45)

Sr. No.	Topic (KBCNMU)	Alloted Hrs. (KBCNMU)	Sub Topics	Req.Hrs.	Dates	Actual Hrs Taken
01	UNIT-I Metabolic pathways in higher plants and their determination	07	Brief study of basic metabolic pathways	01	01/07/23 To 15/07/23	08 hrs
			Formation of different secondary metabolites through these pathways- Shikimic acid pathway	02		
			Acetate pathways, Amino acid pathway.	01		
			Study of utilization of radioactive isotopes in the investigation of Biogenetic studies.	01		
			Steps in radiotracer technique	01		
			Detectors use in radio tracer technique	01		
02	UNIT-II General introduction, composition, chemistry & chemical classes, biosources, therapeutic uses and commercial applications of following secondary metabolites:	14	Alkaloids: Vinca, Rauwolfia,	01	17/7/23 To 23/08/23	16 hrs
			Belladonna, Opium,	01		
			Phenylpropanoids and Flavonoids: Lignans, Tea, Ruta	01		
			Steroids, Cardiac Glycosides & Triterpenoids: Liquorice,	01		
			Dioscorea, Digitalis	01		
			Volatile oils: Mentha, Clove,	01		
			Cinnamon, Fennel, Coriander,	01		
			Tannins: Catechu, Pterocarpus	01		
			Resins: Benzoin, Guggul, Ginger	01		
			Asafoetida, Myrrh, Colophony	01		
			Glycosides: Senna, Aloes, Bitter Almond	02		
			Iridoids, Other terpenoids & Naphthaquinones: Gentian,	01		
			Artemisia, taxus, carotenoids	01		

03	UNIT-III Isolation, Identification and Analysis of Phytoconstituents	06	a) Terpenoids: Menthol, Citral, Artemisin	01	26/9/23 To 06/9/23	08h
			b) Glycosides: Glycyrrhetic acid & Rutin	01		
			c) Alkaloids: Atropine, Quinine, Reserpine, Caffeine	02		
			d) Resins: Podophyllotoxin, Curcumin	01		
04	UNIT-IV Industrial production, estimation and utilization of the following phytoconstituents:	10	Forskolin, Sennoside,	02	9/9/23 to 11/10/23	12h
			Artemisinin, Diosgenin, Digoxin	03		
			Atropine, Podophyllotoxin,	02		
			Caffeine, Taxol,	02		
			Vincristine and Vinblastine	01		
05	UNIT V Basics of Phytochemistry Isolation, purification and identification of crude drugs.	08	Modern methods of extraction,	03	14/10/23 to 31/10/23	09h
			application of latest techniques like Spectroscopy,	02		
			chromatography	02		
			electrophoresis	01		
Total Hrs						45



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Teaching Plan (Theory/Practical) Academic Year 2022-2023


Total Hrs Prescribed (KBCNMU): 4 Hrs/Week


Sub: Physical Pharmaceutics - I

Year: Second Year (Sem- III)

Sr. No.	Topic (KBCNMU)	Allotted hrs. (KBCNMU)	Sub Topics	Req. Hrs.	Dates	Actual Hrs Taken
01	Experiment No. 01	04	Determin. the solubility of drug at room temperature	04	01- 05/08/22	4
02	Experiment No. 02	04	Determination of pKa value by Half Neutralization/Henderson Hasselbalch equation.	04	08 - 13/08/22	4
03	Experiment No. 03	04	Determination of Partition co- efficient of benzoic acid in benzene and water	04	15 - 20/08/22	4
04	Experiment No. 04	04	Determ. of Partition co- efficient of Iodine in CCl ₄ and water	04	22 - 27/08/22	4
05	Experiment No. 05	04	Determination of % composition of NaCl in a solution using phenol-water system by CST method	04	29/08- 03/09/22	4
06	Experiment No. 06	04	Determination of surface tension of given liquids by drop count and drop weight method	04	05 - 09/09/22	4
07	Experiment No. 07	04	Determination of HLB number of a surfactant by saponification method.	04	12 - 16/09/22	4
08	Experiment No. 08	04	Determination of Freundlich and Langmuir constants using activated char coal	04	19 - 23/09/22	4
09	Experiment No. 09	04	Deter. of critical micellar concentration of surfactants	04	26 - 30/09/22	4
10	Experiment No. 10	04	Determination of stability constant and donor acceptor ratio of PABA-Caffeine complex by solubility method	04	03/10 - 07/10/22	4
11	Experiment No. 11	04	Deter. of stability constant and donor acceptor ratio of Cupric-Glycine complex by pH titration method	04	10 - 14/10/22	4
Total Hrs				44		44


Subject In Charge


HOD


Academic in charge


Principal



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Teaching Plan (Theory/Practical) Academic Year 2022-2023

Sub: Physical Pharmaceutics - I

Year: Second Year (Sem- III)

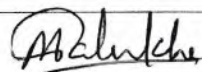
Total Hrs Prescribed (KBCNMU): 3 Hrs/Week (45)

Sr. No	Topic (KBCNMU)	Alloted Hrs. (KBCNMU)	Sub Topics	Req. Hrs.	Dates	Actual Hrs Taken
01	Solubility of drugs	10	Solubility expressions, mechanisms of solute solvent interactions	01	01/08/2022 To 20/08/2022	9
			Ideal solubility parameters, solvation & association,	01		
			Quantitative approach: factors Influencing solubility	01		
			Diffusion principles in biological systems	01		
			Solubility of gas in liquids	01		
			Solubility of liquids in liquids, (Binary solutions, ideal solutions)	01		
			Raoult's law	01		
			Real solutions. Partially miscible liquids	01		
			Critical solution temperature and Applications	01		
			Distribution law, its limitations and applications	01		
02	i) States of Matter and properties of matter ii) Physicochemical properties of drug molecules:	10	State of matter, changes in the state of matter	01	21/08/22 to 05/09/22	11
			Latent heats, vapour pressure,	01		
			Sublimation	01		
			Critical point, eutectic mixtures	01		
			Aerosols – inhalers, relative humidity	01		
			Liquid crystals, glassy states	01		
			Solid crystalline, Amorphous, polymorphism	01		
			Refractive index, optical rotation,	01		
			Dielectric constant, dipole moment,	01		
			Dissociation constant,	01		

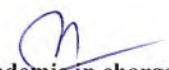


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03	Surface and interfacial phenomenon	08	Liquid interface, surface & interfacial tensions	01	06/09/22 to 24/09/22	8
			Surface free energy	01		
			Measurement of surface & interfacial tensions	01		
			Spreading coefficient	01		
			Adsorption at liquid interfaces	01		
			Surface active agents, HLB Scale	01		
			Solubilisation, detergency	01		
			Adsorption at solid interface	01		
04	Complexation and protein binding	08	Introduction	01	25/09/22 to 11/10/22	7
			Classification of Complexation	01		
			Applications	01		
			Methods of analysis	01		
			Protein binding	01		
			Complexation and drug action	01		
			Crystalline structures of complexes	01		
			Thermodynamic treatment of stability constants	01		
05	pH, buffers and isotonic solutions	07	Sorensen's pH scale	01	12/10/22 to 31/10/22	8
			Ph determination (electrometric and calorimetric),	01		
			Applications of buffers,	01		
			Buffer equation,	01		
			Buffer capacity	01		
			Buffers in pharmaceutical and biological systems	01		
			Buffered isotonic solutions.	01		
Total Hrs				45	45	


Subject In charge


HOD


Academic in charge


Principal

Class:

S.Y.

Sem: III

Sub: Physical Pharm-I