JHARKHAND Rai University
UGC RECOGNISED UNIVERSITY
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Lesson plan & Tracking

Programe : B. Pharma	**Session : 2020-2024**	**Year : THIRD YEAR**	
Course: INDUSTRIAL PHARMACY-I (Theory)			
Name of the Faculty: RANEET DAS	**Commencement Date:**		**Date of Closure:**

Lecture No.	Week	Unit	Topics to be Covered	Blended Mode			Date	Duration	Tracking of Lectures	Related Course Outcome	Signature of Faculty	Signature of HoD	Remarks (if any)
				ICT Tool/Platform/ LMS	Resources	Activity							
1	WEEK 1	UNIT 1	INTRODUCTION TO INDUSTRIAL PHARMACY										
2			Introduction to preformulation, goals and objectives, study of physicochemical characteristics of drug substances.										
3			a. Physical properties: Physical form (crystal & amorphous), particle size, shape, flow properties,										
4			Physical properties: solubility profile (pKa, pH, partition coefficient), polymorphism										
5	WEEK 2		b. Chemical Properties: Hydrolysis, oxidation, reduction, racemisation, polymerization										
6			BCS classification of drugs & its significant Application of preformulation considerations in the development of solid, liquid oral and parenteral dosage forms and its impact on stability of dosage forms.										

7		UNIT 2	Introduction, ideal characteristics of tablets, classification of tablets.									
8			Excipients, Formulation of tablets, granulation methods, compression and processing problems.									
9	WEEK 3		Equipments and tablet tooling.									
10			Tablet coating: Types of coating, coating materials, formulation of coating composition, methods of coating, equipment employed and defects in coating.									
11			Quality control tests: In process and finished product tests									
12			Formulation and manufacturing consideration of syrups and elixirs suspensions and emulsions;									
13			Filling and packaging; evaluation of liquid orals official in pharmacopoeia									
14	WEEK 4		Introduction, Production of hard gelatin capsule shells.									
15			size of capsules, Filling, finishing and special techniques of formulation of hard gelatin capsules, manufacturing defects.									

16		UNIT 3	In process and final product quality control tests for capsules.										
17	WEEK 5		Nature of shell and capsule content, size of capsules,importance of base adsorption and minim/gram factors,										
18			production, in process and final product quality control tests.										
19			Packing, storage and stability testing of soft gelatin capsules and their applications.										
20			Introduction, formulation requirements, pelletization process, equipments for manufacture of pellets										
21	WEEK 6	UNIT 4	Parenteral Products: a. Definition, types, advantages and limitations.										
22			Preformulation factors and essential requirements, vehicles, additives, importance of isotonicity										
23			Production procedure, production facilities and controls, aseptic processing										
24			Formulation of injections, sterile powders, large volume parenterals and lyophilized products.										
25	WEEK 7		Containers and closures selection, filling and sealing of ampoules, vials and infusion fluids. Quality control tests of parenteral products.										
26			Ophthalmic Preparations: Introduction, formulation considerations										

27			formulation of eye drops, eye ointments and eye lotions;										
28			methods of preparation; labeling, containers;										
29	WEEK 8		evaluation of ophthalmic preparations										
30			Formulation and preparation of the cosmetic preparations: lipsticks,										
31			Formulation and preparation of the cosmetic preparations: shampoos,										
32			Formulation and preparation of the cosmetic preparations: cold cream										
33	WEEK 9		Formulation and preparation of the cosmetic preparations: vanishing cream,										
34			Formulation and preparation of the cosmetic preparations: tooth pastes										
35			Formulation and preparation of the cosmetic preparations: Hair dyes										
36			Formulation and preparation of the cosmetic preparations: sunscreens.										
37	WEEK 10	UNIT 5	Pharmaceutical Aerosols: Definition,										
38			propellants, containers, valves, types of aerosol systems										
39			formulation and manufacture of aerosols;										

40			Evaluation of aerosols; Quality control										
41	WEEK 11		stability studies of aerosols.										
42			Packaging Materials Science: Materials used for packaging of pharmaceutical products,										
43			factors influencing choice of containers,										
44			legal and official requirements for containers,										
45			stability aspects of packaging materials, quality control tests.										