



**LESSON PLAN**

Faculty Name: Mr. Ajay Malik

Subject Name: Pharmaceutics I

Class: D. Pharmacy – I<sup>st</sup> year

Subject Code: ER20-11T

**Scope of the Subject:** This course is designed to impart a basic knowledge and skills on the art and science of formulating and dispensing different pharmaceutical dosage forms.

**Course outcome:** Upon successful completion of this course, the students will be able to:

- Describe about the different dosage forms and their formulation aspects.
- Explain the advantages, disadvantages and quality control tests of different dosage forms..
- Discuss the importance of quality assurance and good manufacturing practices.

**Number of Lectures:** 75 + 5

**Each lecture:** 01 hour

Lecture No.	Particular	Remark/Date
<b>Introduction</b>		
1.	General discussion about Various dosage forms and subject	
<b>Module 1: History of the Profession of Pharmacy</b>		
2.	History of Pharmacy Education	
3.	History in relation to Pharmaceutical Industry and Pharmacy Practice	
4.	Various Professional associations	
5.	Pharmacy as a Career	
6.	Introduction to Pharmacopoeias, IP and its salient features	
7.	Introduction to BP and USP	
8.	Introduction to NF and Extra Pharmacopoeia	
<b>Module 2: Packaging materials</b>		
9.	Types of Packaging materials	
10.	Desirable features and selection criteria for Packaging materials	
11.	Study of materials for containers & closures – Glass	
12.	Study of materials for containers & closures – Plastic, Metal & Rubber	
13.	Introduction to Aerosol packing	
<b>Module 3: Pharmaceutical Aids</b>		
14.	Organoleptic agents – Colouring and flavouring agents	
15.	Organoleptic agents – Sweetening agents	
16.	Preservatives	
<b>Module 4: Unit Operations</b>		
17.	Size reduction – Hammer mill and Ball mill	
18.	Size separation - Cyclone separator, sieves and their standards, classification of powders	

19.	Mixing - Double cone blender, turbine mixer	
20.	Mixing - Triple roller mill, Silverson mixer	
21.	Filtration - Theory of filtration	
22.	Filtration - Sintered filters and Membrane filters	
23.	Drying – Fluidized bed dryer and Freeze drying	
24.	Extraction – Definition and Classification	
25.	Extraction – Methods and their applications	
<b>Module 5: Formulations</b>		
26.	<b>Tablets</b> - Introduction – definition, advantages, disadvantages and types of tablets	
27.	Manufacturing of Compressed tablets – granulation methods	
28.	Excipients used in formulation of tablets	
29.	Compression of tablets – Study of single punch and multi punch machine	
30.	Study of Rotary and dry cota machine	
31.	Manufacturing defects in tablets	
32.	Coating of tablets – Sugar coating	
33.	Film coating and Enteric coating Evaluation of tablets	
34.	<b>Capsules</b> - Definition, Advantages, disadvantages and types of capsules	
35.	Excipients used in filling of capsules	
36.	Filling of the hard and Soft gelatin capsules	
37.	Evaluation of capsules	
38.	<b>Liquid oral preparations</b> - Solutions	
39.	Syrups	
40.	Elixirs	
41.	Emulsions	
42.	Suspensions	
43.	Dry powder for reconstitution	
44.	<b>Topical Preparations</b> - Ointments	
45.	Creams	
46.	Pastes	
47.	Gels	
48.	Liniments	
49.	Lotions	
50.	Suppositories	
51.	Passaries	
52.	Nasal Preparations	
53.	Ear Preparations	
54.	<b>Powders and Granules</b> - Insufflations	
55.	Dusting powders	
56.	Effervescent powders and granules	
57.	<b>Sterile formulations</b> - Injectables	
58.	Injectables	

59.	Injectables	
60.	Injectables	
61.	Eye drops	
62.	Eye ointments	
63.	<b>Immunological Products</b> - Introduction and types of immunity, Factors responsible for immunity	
64.	Classification and storage of Immunological Products – Study of vaccines	
65.	Study of Sera	
66.	Study of Toxoids and Antitoxins	
<b>Module 6: GMP and Quality control</b>		
67.	Basic structure and layout of Pharmaceutical manufacturing plants	
68.	Study of various sections and activities of Pharmaceutical manufacturing plants	
69.	Definition and concepts of Quality control and quality assurance	
70.	Current Good Manufacturing Practices (cGMP)	
71.	Introduction to the concept of calibration and validation	
<b>Module 7: Novel Drug Delivery Systems</b>		
72.	Introduction to Novel Drug Delivery Systems	
73.	Classification of delivery systems	
74.	Advantages of Novel Drug Delivery Systems	
75.	Applications and examples	
76.	Challenges in formulation of Novel Drug Delivery Systems	
<b>Revision</b>		
77.	Revision of previous question papers	
78.	Revision of previous question papers	
79.	Revision of previous question papers	
80.	Revision of previous question papers	

Teacher in-charge

HOD

Principal