PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY, PANIPAT

DEPARTMENT OF PHARMACY

Course: Bachelor in Pharmacy

LESSON PLAN

Faculty Name: Dr. Shiva Tushir Subject Name: Pharmacognosy & Phytochemistry-II

Class: B. Pharmacy – 5th Semester Subject Code: BP504T

Scope of the Subject: The main purpose of subject is to impart the students the knowledge of how the secondary metabolites are produced in the crude drugs, how to isolate and identify and produce them industrially. Also this subject involves the study of producing the plants and phytochemicals through plant tissue culture, drug interactions and basic principles of traditional system of medicine

Objectives: Upon completion of the course the student shall be able to**:**

- To know the modern extraction techniques
- Characterization and identification of the herbal drugs and phytoconstituents
- To understand the preparation and development of herbal formulation.
- To understand the herbal drug interactions
- To carry out the isolation and identification of phytoconstituents

Number of Lectures: 45 **Each lecture**: 01 hour

Lecture No.	Particular	Remark/ Date
UNIT-I : Introduction to Pharmacognosy:		
1.	Introduction to basic metabolic pathways	
2.	Detailed study of Shikimic acid pathway	
3.	Detailed study of Acetate malonate pathway	
4.	Detailed study of Acetate mevalonate pathway	
5.	Detailed study of Amino acid pathway	
6.	Introduction to radioactive isotopes	
7.	Investigation of Biogenetic studies	
8.	General introduction, composition, chemistry & chemical classes, biosources, therapeutic uses and commercial applications of Vinca & Rauwolfia	
9.	General introduction, composition, chemistry & chemical classes, biosources, therapeutic uses and commercial applications of Belladonna & Opium	
10.	General introduction, composition, chemistry & chemical classes, biosources, therapeutic uses and commercial applications of Lignans, Tea, Ruta	
11.	General introduction, composition, chemistry & chemical classes, biosources, therapeutic uses and commercial applications of Liquorice, Dioscorea, Digitalis	
12.	General introduction, composition, chemistry & chemical classes, biosources, therapeutic uses and commercial applications of Volatile oil- Mentha & Clove	

13.	General introduction, composition, chemistry & chemical classes, biosources, therapeutic uses and commercial applications of Cinnamon, Fennel, Coriander	
14.	General introduction, composition, chemistry & chemical classes, biosources, therapeutic uses and commercial applications of Catechu, Pterocarpus	
15.	General introduction, composition, chemistry & chemical classes, biosources, therapeutic uses and commercial applications of Benzoin, Guggul, Ginger, Asafoetida, Myrrh, Colophony	
16.	General introduction, composition, chemistry & chemical classes, biosources, therapeutic uses and commercial applications of Senna, Aloes, Bitter Almond	
17.	General introduction, composition, chemistry & chemical classes, biosources, therapeutic uses and commercial applications of Gentian, Artemisia, taxus, carotenoids	
18.	Isolation, Identification and Analysis of Menthol, Citral	
19.	Isolation, Identification and Analysis of Artemisin	
20.	Isolation, Identification and Analysis of Glycyrhetinic acid	
21.	Isolation, Identification and Analysis of Rutin	
22.	Isolation, Identification and Analysis of Atropine	
23.	Isolation, Identification and Analysis of Quinine	
24.	Isolation, Identification and Analysis of Reserpine	
25.	Isolation, Identification and Analysis of Caffeine	
26.	Isolation, Identification and Analysis of Podophyllotoxin, Curcumin	
27.	Industrial production, estimation and utilization of Forskolin	
28.	Industrial production, estimation and utilization of Sennoside	
29.	Industrial production, estimation and utilization of Artemisinin	
30.	Industrial production, estimation and utilization of Diosgenin	
31.	Industrial production, estimation and utilization of Digoxin	
32.	Industrial production, estimation and utilization of Atropine	
33.	Industrial production, estimation and utilization of Podophyllotoxin	
34.	Industrial production, estimation and utilization of Caffeine	
35.	Industrial production, estimation and utilization of Taxol	
36.	Industrial production, estimation and utilization of Vincristine	
37.	Industrial production, estimation and utilization of Vinblastine	
38.	Taditional methods of extraction	
39.	Modern methods of extraction	
40.	Study of Spectroscopy techniques	
41.	Role of Spectroscopy techniques in Pharmacognosy	
42.	Study of Chromatographic techniques	
43.	Role of Chromatographic techniques in Pharmacognosy	
44.	Study of Electrophoresis	
45.	Role of Electrophoresis in Pharmacognosy	

Dr Shiva Tushir

Teacher in-charge **HOD** **Principal**