



LESSONPLAN

Faculty Name: Dr. Sonia Narwal

Class: B. Pharmacy: 6th Semester

Subject: Herbal Drug Technology

Subject Code: BP603T

Scope of the Subject: This subject gives the student the knowledge of basic understanding of herbal drug industry, the quality of raw material, guidelines for quality of herbal drugs, herbal cosmetics, natural sweeteners, nutraceutical etc. The subject also emphasizes on Good Manufacturing Practices (GMP), patenting and regulatory issues of herbal drugs.

Course outcome: Upon completion of the course student shall be able to

- Understand raw material as source of herbal drugs from cultivation to herbal drug product
- Know the WHO and ICH guidelines for evaluation of herbal drugs
- Know the herbal cosmetics, natural sweeteners, nutraceuticals
- Appreciate patenting of herbal drugs, GMP .

- **Number of Lectures:** 45 + 5
- **Each lecture:** 01 hour

Lecture No.	Particular	Remark/Date
Introduction		
1.	General discussion about basic concepts of Herbal Drugs	
Unit 1		
Module 1: Herbs as raw materials		
2.	Definition of herb, herbal medicine, herbal medicinal product, herbal drug preparation	
3.	Source of Herbs, Selection, identification and authentication of herbal materials	
4.	Processing of herbal raw material	
Module 2: Biodynamic Agriculture		
5.	Good agricultural practices in cultivation of medicinal plants	
6.	Organic farming. Pest and Pest management in medicinal plants	
7.	Biopesticides/Bioinsecticides.	
Unit II		
Module 3: Basic Principles		
8.	Basic principles involved in Ayurveda and Siddha	
9.	Basic principles involved in Unani and Homeopathy	
10.	Preparation and standardization of Ayurvedic formulations viz Aristas and Asawas,	
11.	Ghutika and Churna, Lehya and Bhasma	

UNIT –III**Module 4: Nutraceuticals**

12.	General aspects, Market, growth, scope and types of products available in the market.	
13.	Health benefits and role of Nutraceuticals in ailments like Diabetes, CVS diseases	
14.	Cancer, Irritable bowel syndrome	
15.	Gastro intestinal diseases, Fenugreek, Garlic, Honey, Amla	
16.	Study of herbs as health food like Alfaalfa, Chicory, Ginger	
17.	Ginseng, Ashwagandha, Spirulina	

Module 5: Herbal-Drug and Herb-Food Interactions

18.	Study of following drugs and their possible side effects and interactions: Hypercium, kava-kava	
19.	Ginkobiloba, Ginseng, Garlic, Pepper & Ephedra	

UNIT-IV**Module 6: Herbal Cosmetics**

20.	Sources and description of raw materials of herbal origin used via, fixed oils, waxes, gums colours	
21.	Perfumes, protective agents, bleaching agents	
22.	Antioxidants in products such as skin care, hair care and oral hygiene products	

Module 7: Herbal excipients

23.	Significance of substances of natural origin as excipients – colorants, sweeteners	
24.	Binders, diluents, viscosity builders, disintegrates, flavors & perfumes	

Module 8: Herbal formulations

25.	Conventional herbal formulations like syrups, mixtures	
26.	Tablets	
27.	Novel dosage forms like Phytosomes	

UNIT V**Module 9: Evaluation of Drugs**

28.	WHO guidelines for the assessment of herbal drugs	
29.	ICH guidelines for the assessment of herbal drugs	
30.	Stability testing of herbal drugs	

Module 10: Patenting and Regulatory requirements of natural products

31.	Patent, IPR, Farmers right, Breeder's right	
32.	Bioprospecting and Biopiracy	
33.	Patenting aspects of Traditional Knowledge and Natural Products	
34.	Case study of Curcuma & Neem	

Module 11: Regulatory Issues

35.	Regulations in India (ASU DTAB, ASU DCC)	
36.	Regulation of manufacture of ASU drugs	
37.	Schedule Z of Drugs & Cosmetics Act for ASU drugs	

UNIT VI**Module 12: General Introduction to Herbal Industry**

38.	Herbal drugs industry: Present scope	
39.	Herbal drugs industry: Future prospects	
40.	A brief account of plant based industries involved in work on medicinal and aromatic plants in India	
41.	A brief account of institutions involved in work on medicinal and aromatic plants in India	
Module 13: Schedule T – Good Manufacturing Practice of Indian systems of medicine		
42.	Components of GMP (Schedule – T) and its objectives	
43.	Infrastructural requirements, working space, storage area, machinery and equipment	
44.	Standard operating procedures, health and hygiene, documentation and records	
Revision		
45.	Revision of Unit I with previous question paper	
46.	Revision of Unit II with previous question papers	
47.	Revision of Unit III with previous question papers	
48.	Revision of Unit IV with previous question papers	
49.	Revision of Unit V with previous question papers	
50.	Revision of Unit VI with previous question papers	

Teacher in-charge

HOD

Principal