



Second Semester 2018-2019
Course Handout Part II

Date: 07.01.2019

In addition to part I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

Course No. : PHA F344
Course Title : Natural Drugs
Instructor-in-charge : A. SAJELI BEGUM
Instructors : A. Sajeli Begum, Samrun and Kirti

1. Scope and Objective of the Course:

This course deals with study of crude drugs of natural origin, currently used in pharmacy and medicine. The study comprises of classification of crude drugs, principles of cultivation, collection, preparation for market and commerce of natural drugs, their morphological, microscopical and chemical characteristics, identification, uses and common adulterants.

2. Learning Outcome:

Knowledge on herbal crude drugs and their therapeutic effects
Knowledge on various bioactive secondary metabolites and their formation in plants
Standardization methods and Identification of adulterants in crude drugs

3. Text Book: Trease and Evans' Pharmacognosy, Evans, W C and D.Evans, Saunders, 16th ed, 2009.

Reference Books:

1. Tyler V.E, Brady, L.R, Rodders, J.E, Pharmacognosy, K.M.Varghese, 8th ed., 1981.
2. Wallis T.E, Text book of Pharmacognosy, CBS Publishers, 5th ed., 1997.
3. Kokate C. K., Purohit A. P., Gokhale S. B., Pharmacognosy, 47th ed. 2012.

4. Course Plan:

Lec. No.	Learning Objectives	Topic to be covered	Text Book Chapter
01	Introduction	Pharmacognosy, Classification, Plant Nomenclature	3, 8
2-5	Microscopy, Macroscopical Study of Plant Tissues	Plant description, Macromorphology and micromorphology, ergastic cell contents, Standardisation parameters	42-43
6-7	Phytochemical extraction, separation and characterization techniques	Methods of extraction, isolation, purification and characterization of secondary metabolites to discover natural drugs. General methods for the structure determination of alkaloids, glycosides, and flavonoids.	18 + class notes

8-12	Study on Alkaloids	Alkaloidal Drugs like Atropa, Coca, Ephedra, Opium, Ipecac, Colchicum, Ergot, Nux vomica, Rauwolfia, Cinchona, Aconite, Kurchi, etc.	27
13-17	Study on Biologically active glycosidal drugs	Glycosidal drugs like Senna Cascara, rhubarb, aloes, digitalis strophanthus, squill, quillia, liquorice, etc	26
18-20	Study on Volatile oil Containing Crude drugs	Volatile oil containing drugs like caraway dill, coriander, aniseed, Fennel, cinnamon, nutmeg, Clove, Cardamom, etc	23
21-22	Study of resins	Resinous drugs like ginger, asafoetida, Benzoin, Balsam of tolu, Balsam of peru	20, 23
23	Study on Terpenoidal drugs	Gentian, Valerian, Quassia and Saffron	23, 25
24-25	Study on Fixed oil containing drugs	Castor oil, Theobroma oil, Shark liver oil, Cod liver oil	20
26-28	Naturally Occurring Carbohydrate drugs	Carbohydrates like honey, acacia, tragacanth, agar and starches	21
29-31	Knowledge on Anticancer Plant Derivatives	Vinca, Podophyllum, taxol, camptothecin	28
32-33	Knowledge on Immunomodulatory class of Drugs	Immunomodulatory botanicals and herbs as functional food	Journal review articles
35-36	Knowledge on Dietary Antioxidants	Recent plant derived antioxidants and botanicals	Journal articles
37-39	Knowledge on Marine Natural drugs	Recent developments on drugs of marine origin	16 + Journal articles

4. Evaluation Scheme:

EC No.	Evaluation Component	Duration	Weightage (%)	Date & Time	Remarks
1.	Mid Sem Test	90 min	20	15/3 9.00 - 10.30AM	CB
2.	Surprise quiz (Pre and Post Mid term)	-	5+5		CB
3.	Lab Components (A) Day to day work & Viva (B) Lab. Compre/Quiz	-	10+5 15		OB+CB
4.	Compre. Exam.	3 hr	40	10/05 FN	OB (15)/ CB (25)

5. **Attendance:** Regularity in theory and practical classes will be decisive factor during grading, especially in borderline cases.

6. **Chamber Consultation Hour:** To be announced in the class.

7. **Make-up policy:** Generally make-up will be considered for medical reason for regular students (80% attendance in Lecture Class) only.

8. **Notices:** Notices concerning this course will be displayed on Pharmacy N. B.

9. Academic Honesty and Integrity Policy: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

**Instructor-in-charge
PHA F344**