



Second Semester 2023-2024

## Course Handout Part II

Date: 09.01.2023

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 N, Lakshmi Soukya and  
Srivarsha, Venkatesh E.

### 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, 16<sup>th</sup> ed, 2009.

### Reference Books:

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

### 4. Course Plan:

Lec. No.	Learning Objectives	Topic to be covered	Chapter in the Text Book
01	Introduction	Pharmacognosy, Classification, Plant Nomenclature	3, 8
2-3	Microscopy, Macroscopical Study of Plant Tissues	Plant description, Macromorphology and micromorphology, ergastic cell contents, Standardisation parameters	42-43
4-5	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,	18 + class notes

		glycosides, and flavonoids.	
6-10	Study on Alkaloids	Alkaloidal Drugs like Atropa, Coca, Ephedra, Opium, Ipecac, Colchicum, Ergot, Nux vomica, Rauwolfia, Cinchona, Aconite, Kurchi, etc.	27
11-13	Study on Biologically active glycosidal drugs	Glycosidal drugs like Senna Cascara, rhubarb, aloes, digitalis strophanthus, squill, quillia, liquorice, etc	26
14-16	Study on Volatile oil Containing Crude drugs	Volatile oil containing drugs like caraway dill, coriander, aniseed, Fennel, cinnamon, nutmeg, Clove, Cardamom, etc	23
17-18	Study of resins	Resinous drugs like ginger, asafoetida, Benzoin, Balsam of tolu, Balsam of peru	20, 23
19	Study on Terpenoidal drugs	Gentian, Valerian, Quassia and Saffron	23, 25
20-21	Study on Fixed oil containing drugs	Castor oil, Theobroma oil, Shark liver oil, Cod liver oil	20
22	Naturally Occurring Carbohydrate drugs	Carbohydrates like honey, acacia, tragacanth, agar and starches	21
23-24	Knowledge on Anticancer Plant Derivatives	Vinca, Podophyllum, taxol, camptothecin	28
25	Knowledge on Immunomodulatory class of Drugs	Immunomodulatory botanicals and herbs as functional food	Journal review articles
26	Knowledge on Dietary Antioxidants	Recent plant derived antioxidants and botanicals	Journal articles
27-28	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	Nature of Component
1.	Mid Sem Test	90 min	25	13/03 - 2.00 - 3.30PM	CB
2	Continuous Assessment* (Assignment and Laboratory evaluation)	continuous	10+20		OB
3	Quiz	Surprise	5		OB
4.	Compre. Exam.	180 min	40	11/05 AN	CB (30)+OB (10)

\* Continuous assessment will be based on topics covered in class and practicals. Assignment topics and number will be announced in the class. Lab evaluation will be based on day to day laboratory experiment record work, Quiz and class participation. In case of laboratory practical, students are expected to write lab records properly in addition to what is taught, refer other books, draw proper diagrams, and submit the lab records on time through google class room.

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

6. **Chamber Consultation Hour:** After the practical 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 posted in Google class room / CMS.

**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**