Course Curriculum

Course Title: Pharmacognosy-II		Course Code: BPH 122
Credit: 3	**Contact Hours:** 45 hours	**Total Marks:** 100

Rationale:

This subject introduces gross phytochemistry and pharmaceutical as well as pharmacological uses of different plant constituents along with considerations of some important local and foreign drugs of each group.

Course Learning Outcomes:

- Describe the source, collection, identification, preparation and extraction of drugs
- Apply the knowledge regarding mode of drug action
- Distinguish among different classes of drugs and their activities which can be modified or improved

Unit Learning Outcomes	Course Content	Teaching Strategy	Assessment Strategy
➢ Discuss the classification and biosynthesis of glycoside ➢ Generalize the different glycoside containing plants ➢ Associate their use with local applications	**Glycosides and glycoside- containing drugs:** Introduction, classifications & biosynthesis of glycosides. The details of the following classes of glycosides and glycoside-containing drugs: I.Cardiac: Digitalils, Strophanthus, Squill, Nerium. II. Anthraquinones: Cascara sagrada, Aloe, Senna, Rhubarb. III. Saponins: Sarsaparilla, Glycyrrhiza, Dioscorea. IV.Cyanogenic: Wild Cherry. V.Isothiocyanate: Mustard (Black mustard and White mustard). VI.Other glycosides like alcohol, phenol, aldehyde, flavonoid, lactone, etc. and neutral principles: Gentian, Quassia, Saffron.	Lecture Group discussion Video clips Brainstorming Problem based learning	Short answer Interview Assignment Presentation Observation MCQ

➢ Discuss the classification and biosynthesis of alkaloid ➢ Generalize the different Alkaloid containing plants ➢ Associate their use with local applications	**Alkaloids:** The details of the following: I. Tropane: Belladonna, Stramonium, Hyoscyamus, etc. II. Quinoline: Cinchona, Cusparia. III. Isoquinoline: Ipecac, Opium, Sanguinaria, Curare. IV. Indole: Rauwolfia, Nux vomica, Ergot, Catharanthus. V. Imidazole: Pilocarpine. VI. Steroidal: Veretrumviride, Aconite. VII. Lupinea: Lupinus spp. VIII. Purine base-Coffee, Tea. Biosynthesis of tropane, quinoline, isoquinoline and indole alkaloids.	Lecture Group discussion Video clips Brainstorming Problem based learning	Short answer Interview Assignment Presentation Observation
➢ Discuss the classification and biosynthesis and method of extraction of volatile oil ➢ Generalize the different volatile oil containing plants ➢ Associate their use with local applications	**Volatile oils and related terpenoids:** Methods of obtaining volatile oils, chemistry, their medicinal and commercial uses, biosynthesis of some important volatile constituents used as drugs. The details of the following classes of volatile oils: I. Terpenes or sesquiterpenes: Pinus, Juniper, Cade. II. Alcohols: Coriander, Sandalwood. III. Ester: Peppermint, Lavender, Rosemarry. IV. Aldehydes: Cinnamon, Eucalyptus, Lemon, Lemon grass. V.Ketons: Spearmint, Caraway, Dill, Camphor. VI. Phenols: Clove, Cinnamon, Ajowan. VII. Ethers: Fennel, Nutmeg, Eucalyptus, Anise, Cajuput. VIII. Peroxides: Chenopodium. IX.Others: Mustard, Wintergreen, Bitter almond.	Lecture Group discussion Demonstration Video clips Brainstorming Problem based learning	Essay type Interview Assignment Presentation Observation MCQ

➢ Discuss the classification and biosynthesisof Phenolic compounds ➢ Generalize the different tannins containing plants ➢ Associate their use with local applications	**Phenolic compounds and tannins:** Chemical nature and tests for tannins and some tannin-containing drugs such as Nutgall and Catechu.	Lecture Group discussion Demonstration Video clips Brainstorming Problem based learning	Short answer Vivavoce Assignment Presentation Observation
➢ Discuss the classification and biosynthesisof resins ➢ Generalize the different resin containing plants ➢ Associate their use with local applications	**Resin and resin combinations:** General consideration, classification and study of resin, oleo resin, oleo- gum resin, tolu balsam and benzoin.	Lecture Group discussion Demonstration Video clips Brainstorming	Short answer Interview Assignment Presentation Observation MCQ
➢ Explain the herbal products as health benefit ➢ Analyze their comparative functions of each of them	**Herb as health foods:** Alfa alfa, Apricot, Pits, Arnica, Garlic, Onion, Ginseng, Spirulina, Fenugreek, Sassafras, Honey, Nigella etc	Lecture Group discussion Demonstration Video clips Brainstorming Problem based learning	Short answer Interview Assignment Presentation Observation
➢ Explain the poisonous plants as natural pesticides ➢ Analyze their comparative functions of each of them	**Poisonous plants and natural pesticides:** Datura, Poison hemlock, Water hemlock, Foxglove (digitalis), Ipornoca, Tobacco, Poppy, Pyrethrum flower, Derris &Lanchocarpus, Red squill, Strychnine, etc.	Lecture Group discussion Demonstration Video clips Brainstorming Problem based learning	Short answer Interview Assignment Presentation Observation MCQ

RECOMMENDED BOOKS

1. Pharmacognosy- Varro E. Tyler, Lynn R. Brady & James E. Robbers, 9th edition, Lea &Febiger, Philadelphia.
2. Pharmacognosy- Trease& Evans.
3. Pharmacognosy- Edward P. Claus, Varro E. Tyler, 5th edition, Lea &Febiger, Philadelphia
4. Textbook of Pharmacognosy- T. E. Wallis, 5th edition, J & A Churchill.
5. Practical Pharmacognosy- Rasheeduz Zafar, 1st edition, CBS Publishers.
6. Natural Products, A Laboratory Guide - Raphael Ikan, Acadec Press, Inc., London.