

BP504T. PHARMACOGNOSY AND PHYTOCHEMISTRY II (Theory)

45Hours

Course Content:

Unit-I

7 Hours

Metabolic pathways in higher plants and their determination

Brief study of basic metabolic pathways and formation of different secondary metabolites through these pathways- Shikimic acid pathway, Acetate pathways and Amino acid pathway. Study of utilization of radioactive isotopes in the investigation of Biogenetic studies.

Unit-II

14 Hours

General introduction, composition, chemistry & chemical classes, bio -sources, therapeutic uses and commercial applications of following secondary metabolites:

Alkaloids: Vinca, Rauwolfia, Belladonna, Opium.

Phenylpropanoids and Flavonoids: Lignans, Tea, Ruta.

Steroids, Cardiac Glycosides & Triterpenoids: Liquorice, Dioscorea, Digitalis.

Volatile oils: Mentha, Clove, Cinnamon, Fennel, Coriander.

Tannins: Catechu, Pterocarpus.

Resins: Benzoin, Guggul, Ginger, Asafoetida, Myrrh, Colophony.

Glycosides: Senna, Aloes, Bitter Almond.

Iridoids, Other terpenoids & Naphthaquinones: Gentian, Artemisia, Taxus, carotenoids.

Unit-III

06 Hours

Isolation, Identification and Analysis of Phytoconstituents.

Terpenoids: Menthol, Citral, Artemisin.

Glycosides: Glycyrrhetic acid & Rutin.

Alkaloids: Atropine, Quinine, Reserpine, Caffeine

Resins: Podophyllotoxin, Curcumin.

Unit-IV

10 Hours

Industrial production, estimation and utilization of the following phytoconstituents:

Forskolin, Sennoside, Artemisinin, Diosgenin, Digoxin, Atropine, Podophyllotoxin, Caffeine, Taxol, Vincristine and Vinblastine.

Unit-V

8 Hours

Basics of Phytochemistry

Modern methods of extraction, application of latest techniques like Spectroscopy, Chromatography and electrophoresis in the isolation, purification and identification of crude drugs.