

<b>Subject Code:</b> BP405T	<b>Subject Title:</b> PHARMACOGNOSY AND PHYTOCHEMISTRY I - THEORY
<b>Pre-requisite Subject</b>	<b>- NONE -</b>

**Scope:** The subject involves the fundamentals of Pharmacognosy like scope, classification of crude drugs, their identification and evaluation, phytochemicals present in them and their medicinal properties.

**Objectives:** Upon completion of the course, the student shall be able

1. to know the techniques in the cultivation and production of crude drugs
2. to know the crude drugs, their uses and chemical nature
3. know the evaluation techniques for the herbal drugs
4. to carry out the microscopic and morphological evaluation of crude drugs

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)		
Lecture	Tutorial	Practical	Credit	Theory(T)		Total Marks
				University Assessment	Continuous Assessment	
3	1	--	4	75	25	100

Subject Contents			
Sr. No	Topic	Total Hours	Weight (%)
1	<b>Unit –I</b> <b>Introduction to Pharmacognosy:</b> (a) Definition, history, scope and development of Pharmacognosy (b) Sources of Drugs – Plants, Animals, Marine & Tissue culture (c) Organized drugs, unorganized drugs (dried latex, dried juices, dried extracts, gums and mucilages, oleoresins and oleo- gum -resins). <b>Classification of drugs:</b> Alphabetical, morphological, taxonomical, chemical, pharmacological, chemo and serotaxonomical classification of drugs <b>Quality control of Drugs of Natural Origin:</b> Adulteration of drugs of natural origin. Evaluation by organoleptic, microscopic, physical, chemical and biological methods and properties. Quantitative microscopy of crude drugs including lycopodium spore method, leaf constants, camera lucida and diagrams of microscopic objects to scale with camera lucida.	10	22
2	<b>Unit –II</b> <b>Cultivation, Collection, Processing and storage of drugs of natural origin:</b> Cultivation and Collection of drugs of natural origin Factors influencing cultivation of medicinal plants. Plant hormones and their applications. Polyploidy, mutation and hybridization with reference to medicinal plants <b>Conservation of medicinal plants</b>	10	22
3	<b>Unit- III</b> <b>Plant tissue culture:</b> Historical development of plant tissue culture, types of cultures, Nutritional requirements, growth and their maintenance. Applications of plant tissue culture in pharmacognosy.	07	16

	Edible vaccines		
4	<p><b>Unit-IV</b>  <b>Pharmacognosy in various systems of medicine:</b>            Role of Pharmacognosy in allopathy and traditional systems of medicine namely, Ayurveda, Unani, Siddha, Homeopathy and Chinese systems of medicine.  <b>Introduction to secondary metabolites:</b>            Definition, classification, properties and test for identification of Alkaloids, Glycosides, Flavonoids, Tannins, Volatile oil and Resins</p>	10	22
5	<p><b>Unit-V</b>            Study of biological source, chemical nature and uses of drugs of natural origin containing following drugs  <b>Plant Products:</b>            Fibers - Cotton, Jute, Hemp            Hallucinogens, Teratogens, Natural allergens  <b>Primary metabolites:</b>            General introduction, detailed study with respect to chemistry, sources, preparation, evaluation, preservation, storage, therapeutic used and commercial utility as Pharmaceutical Aids and/or Medicines for the following Primary metabolites:  <b>Carbohydrates:</b> Acacia, Agar, Tragacanth, Honey  <b>Proteins and Enzymes:</b> Gelatin, casein, proteolytic enzymes (Papain, bromelain, serratiopeptidase, urokinase, streptokinase, pepsin).  <b>Lipids(Waxes, fats, fixed oils) :</b> Castor oil, Chaulmoogra oil, Wool Fat, Bees Wax  <b>Marine Drugs:</b>            Novel medicinal agents from marine sources</p>	08	18

**Recommended Books: (Latest Editions)**

1. W. C .Evans, Trease and Evans Pharmacognosy, 16<sup>th</sup> edition, W.B. Saunders & Co., London, 2009.
2. Tyler, V.E., Brady, L.R. and Robbers, J.E., Pharmacognosy, 9<sup>th</sup> Edn., Lea and Febiger, Philadelphia, 1988.
3. Text Book of Pharmacognosy by T.E. Wallis
4. Mohammad Ali. Pharmacognosy and Phytochemistry, CBS Publishers & Distribution, New Delhi.
5. Text book of Pharmacognosy by C.K. Kokate, Purohit, Gokhlae (2007), 37<sup>th</sup> Edition, Nirali Prakashan, New Delhi.
6. Herbal drug industry by R. D. Chaudhary (1996), 1<sup>st</sup> Edn, Eastern Publisher, New Delhi.
7. Essentials of Pharmacognosy, Dr. S. H. Ansari, 11<sup>th</sup> edition, Birla publications, New Delhi, 2007.
8. Practical Pharmacognosy: C.K. Kokate, Purohit, Gokhlae.
9. Anatomy of Crude Drugs by M.A. Iyengar.