SILVER OAK UNIVERSITY

SILVER OAK COLLEGE OF PHARMACY (067)

Program Name: B.Pharm

Subject Name: Pharmacognosy & Photochemistry-I

Subject Code: 1180673205

Semester: III

Prerequisite:

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.

Objective: Upon completion of the course the student shall be able to

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 drug

Teaching Scheme:

Teaching Scheme				
L	T	P	Contact Hours	Credit
3	1	4	8	6

Content:

Unit No.	Contents	Teaching Hours	Weightage %
1	**Introduction to Pharmacognosy:** (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). **Classification of drugs:** Alphabetical, morphological, taxonomical, chemical, pharmacological, chemo and sero	10	22.22

	taxonomical classification of drugs **Quality control of Drugs of Natural Origin:** 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.		
2	**Cultivation, Collection, Processing and storage of drugs of natural origin:** 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 Conservation of medicinal plants	10	22.22
3	**Plant tissue culture:** Historical development of plant tissue culture, types of cultures, Nutritional requirements, growth and their maintenance. Applications of plant tissue culture in pharmacognosy. Edible vaccines	7	15.55
4	**Pharmacognosy in various systems of medicine:** Role of Pharmacognosy in allopathy and traditional systems of medicine namely, Ayurveda, Unani, Siddha, Homeopathy and Chinese systems of medicine. **Introduction to secondary metabolites:** Definition, classification, properties and test for identification of Alkaloids, Glycosides, Flavonoids, Tannins, Volatile oil and Resins	10	22.22
5	Study of biological source, chemical nature and uses of drugs of natural origin containing following drugs **Plant Products:** Fibers - Cotton, Jute, Hemp Hallucinogens, Teratogens, Natural allergens **Primary metabolites**: 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	08	17.77

	Primary metabolites: **Carbohydrates:** Acacia, Agar, Tragacanth, Honey **Proteins and Enzymes:** Gelatin, casein, proteolytic enzymes (Papain, bromelain, serratiopeptidase, urokinase, streptokinase, pepsin). **Lipids (Waxes, fats, fixed oils):** Castor oil, Chaulmoogra oil, Wool Fat, Bees Wax **Marine Drugs:** Novel medicinal agents from marine		

Course Outcome: After Completion of Syllabus Students will able to

Sr. No.	CO statement	Unit No
CO-1	To study about pharmacognosy, classification of crude drug	1
CO-2	To integrate the different concept of Cultivation, Collection, Processing and storage of drugs of natural origin.	2
CO-3	To understand about Plant tissue culture.	3
CO-4	To have been introduced about Role of Pharmacognosy in allopathy and traditional systems of medicine	4
CO-5	Understanding of concepts of carbohydrate, lipid, protein and marine drug,	5

Teaching & Learning Methodology: -

The various methods or tools follows by the faculties to teach the above subject are:

1. Chalk and board method
2. Experiential learning.
3. Power point presentation and slide show method

List of Experiments:

Students will perform following Experiments

1. Analysis of crude drugs by chemical tests: (i)Tragaccanth (ii) Acacia (iii)Agar (iv) Gelatin (v) starch (vi) Honey (vii) Castor oil
2. Determination of stomatal number and index
3. Determination of vein islet number, vein islet termination and palisade ratio.
4. Determination of size of starch grains, calcium oxalate crystals by eye piece micrometer
5. Determination of Fiber length and width
6. Determination of number of starch grains by Lycopodium spore method
7. Determination of Ash value
8. Determination of Extractive values of crude drugs
9. Determination of moisture content of crude drugs
10. Determination of swelling index and foaming

Books Recommended

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

CO-PO-PSO Matrix:

Co. No.	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO-1	3	1	3	3	-	2	-	2	3	3	2	3	2
CO-2	3	2	3	2	-	2	-	2	3	2	2	3	3
CO-3	3	1	2	2	-	2	-	3	2	2	2	3	3
CO-4	3	2	2	2	-	3	-	3	2	2	2	3	2
CO-5	3	2	2	2	-	2	-	3	2	3	2	3	2