

GUJARAT TECHNOLOGICAL UNIVERSITY

B.Pharm
SEMESTER: VII

Subject Name: Pharmacognosy-V
Subject Code: 2270005

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	Theory		Practical	
				External	Internal	External	Internal
3	0	3	6	80	20	80	20

Theory

Sr No	Course Contents	Total Hrs
1.	Biosynthetic studies and basic metabolic pathways: Brief introduction to biosynthetic pathways of secondary metabolite. Biogenesis of pharmaceutically important compounds Acetate mevalonate: Menthol, Vitamin-A, Diosgenin, β -amyrin, Glycyrrhetic acid, Carotenoids Shikimic acid: Atropine, Quinine, Reserpine, Morphine, Podophyllotoxin, Ephedrine, Colchicine, Ergot Alkaloids Acetate malonate: Linoleic acid, Omega-3 fatty acid	12
2.	Natural allergens, Photosensitizing agents, Fungal toxins, Toxic plants and toxicological risk of plant drugs.	4
3.	Pesticides and herbicides	2
4.	Herbal cosmetics	2
5.	Nutraceuticals	2
6.	Plant sweeteners	1
7.	Concept of Ayurveda, Ayurvedic formulations and their quality control: Introduction and principles of Ayurvedic, Unani, Siddha and Homeopathic systems of medicines. The holistic concept of Ayurvedic system of medicine. A study on different types of Ayurvedic formulations like Churna, Kwath, Gutika, Taila, Ghrita, Avaleha, Asavas, Arista, Bhasma and Pisti. Evaluation of Ayurvedic formulations.	10
8.	Detail study of Ayurvedic Drugs: Studies of traditional drugs, Common vernacular names, Botanical sources, Morphology, Chemical nature of chief constituents, Pharmacological categories, common uses and marketed formulations of following indigenous drugs Stem: Galo Leaf: Nagod Bark: Shirish Root: Chitrak, Rasna Fruit: Malkangni, Kalijiri Seed: Mucuna Flower: Dhatakipushpa Entire herb: Shankhpushpi, Punarnava Unorganised: Shilajit	12

Practical – 22700P5

1. Study of Morphology, Microscopy & TLC study of following crude drugs (T.S., Powder, Microscopy & TLC of underlined drugs) :
 - Galo
 - Nagod
 - Shirish
 - Chitrak (red and White)
 - Rasna (Pluchea & Alpinia)
 - Punarnava
 - Malkangani, Kalijiri, Dhatakipushpa, Shilajit, Mucuna, Shankpushpi
2. Study of plant used as insecticide, pesticide and herbicides
3. Preparation and evaluation of Herbal Cosmetics (Hair oil, Shampoo, Cream)
4. Preparation and evaluation of Churna (Triphala & Trikatu)
5. Preparation, Physical and chemical evaluation of Ayurvedic Preparations
Asavas, Arishta, Taila, Pills/Tablets.
6. Preparation of Avaleha and Kwath.
7. Study of Toxic Plants
8. Study of Plant Sweeteners

References Books:

1. Cultivation and Utilization of Medicinal Plants, Atal C. K. and Kapur B. M., RRL Jammu, 1st Edition, 1989.
2. Supplement to Cultivation and Utilization of Medicinal Plants, Handa, S.S. and Kaul, M.K., 1996. RRL, CSIR Publication, Jammu Tawi.
3. Pharmacognosy: C. K. Kokate, A. P. Purohit, S. B. Gokhale, Nirali Prakashan Pune, 42nd edition, 2008.
4. Trease and Evans Pharmacognosy. 16th Edition, William Charles Evans, W. Saunders, Edinburg, London, New York, Philadelphia, St. Louis, Sydney, Toronto, 2013.
5. Natural Products, Vol I & II, 28th edi Agrawal O. P., Goel Publishing House, Meerut, 28th Edition, 2004.
6. Chemistry of Natural products. Bhat SV, Nagasampagi BA, Meenakshi S. Narosa Publishing House, New Delhi, 2005.
7. Medicinal Natural Products, A Biosynthetic Approach. Dewick Paul M, John Wiley and Sons, West Sussex, 2009.
8. The Organic Constituents of Higher Plants. Their chemistry and interrelationships. Trevor Robinson, Burges Publishing Company, Minneapolis, USA, 1963.
9. Quality Control, Herbal Drugs, An approach to evaluation of Botanicals. Mukherjee P K, Business Horizons Pharmaceutical Publishers; 2002
10. The Ayurvedic Pharmacopoeia of India, Part I, (Vol. I–V) , part II (I & II) Govt. of India, Ministry of Health and Family Welfare, Dept. of Indian Systems of Medicine and Homeopathy, New Delhi 2008.

11. The Ayurvedic Formulary of India, Vol. I, II and III, Published by Government of India, New Delhi, 1st Edition, 2000.
12. The Wealth of India (Raw Material & Industrial Product), Published by Council of Scientific Research, New Delhi, 1st Edition, 2005.
13. Indian Medicinal Plants, Kirtikar and Basu, 1st Edition, International Book Distributors, Dehradun, 1999.
14. Ayurveda Unravelled, Sharadini Dahanukar and Urmila Thatte, 1st Edition, 1996, National Book Trust, New Delhi.
15. Compendium of Indian Medicinal Plant Vol. 1 to 6, Rastogi R. P., Mehrotra B. N., CDRI & NISCOM, 1st Edition, New Delhi, 1998
16. Indian Herbal Pharmacopoeia, 1st revised Edition, Published by RRL, Jammu and IDMA, Mumbai, 2002.
17. Quality standards of Indian medicinal plants, Volume I to XI (2003 to 2013) Editor: Neeraj Tundon & Parul Sharma; By : Medicinal plant Unit, ICMR, New Delhi.
18. Malati G Chanhani & A. P.G Pillai, Microscopic profile of powdered drugs used in Indian system of medicine, Volume I, Bark drugs 2005, Institute of Ayurvedic medicinal plant science, Gujarat ayurved unit Jamnagar; CPTA.
19. Malati G Chauhan & A.P.G Pillai, "Microscopic profile of powdered drugs used in Indian systems of Medicine, Leaf Drugs, Vol 2, 2007, Institute of P.G Teaching & Research in Ayurveda, Gujarat Ayurved University, Jamnagar.
20. Malati G Chauhan & A.P.G Pillai, " Microscopic profile of Drugs used in Indian system of Medicine, Seed drugs, Volume- 3, part- 1, 2011; Publisher: Prof Malati G Chauhan, P.G T-S.F C cell, I.P. G T. & R.A, Gujarat Ayurved University, Jamnagar.
21. Review on Indian Medicinal Plants, Vol I to XI (2004 to 2012) Editor: A K Gupta & Neeraj Tundon. By: Indian council of medicinal Research (ICMR), New Delhi.
22. R. D Chaudhry, Herbal Drug Industry, Eastern Publications, New Delhi.