

18BP068 HERBAL DRUG TECHNOLOGY

Hours Per Week :

L	T	P	CP	CL
3	1	4	2	4

Total Hours :

L	T	P	WA/RA	SSH/HSH	CS	SA	S	BS
45	1	60						

SCOPE:

This subject gives the student the knowledge of basic understanding of herbal drug industry, the quality of raw material, guidelines for quality of herbal drugs, herbal cosmetics, natural sweeteners, nutraceutical etc. The subject also emphasizes on Good Manufacturing Practices (GMP), patenting and regulatory issues of herbal drugs.

COURSE OUTCOMES:

Upon completion of the course, the student will be able to achieve the following outcomes:

COs	Course Outcomes	POs	PSOs
1	Understand the raw material as source of herbal drugs from cultivation to herbal drug product	14	1,2
2	Know the WHO and ICH guidelines for evaluation of herbal drugs	14	1,2
3	Know the herbal cosmetics, natural sweeteners, nutraceuticals	14	1,2
4	Appreciate patenting of herbal drugs, GMP	14	1,2

UNIT - I**11 HOURS**

HERBS AS RAW MATERIALS : Definition of herb, herbal medicine, herbal medicinal product, herbal drug preparation Source of Herbs Selection, identification and authentication of herbal materials processing of herbal raw material

BIODYNAMIC AGRICULTURE: Good agricultural practices in cultivation of medicinal plants including Organic farming. Pest and Pest management in medicinal plants: Biopesticides/Bioinsecticides.

INDIAN SYSTEMS OF MEDICINE: Basic principles involved in Ayurveda, Siddha, Unani and Homeopathy. Preparation and standardization of Ayurvedic formulations viz Aristas and Asawas, Ghutika, Churna, Lehya and Bhasma.

UNIT - II**7 HOURS**

NUTRACEUTICALS: General aspects, Market, growth, scope and types of products available in the market. Health benefits and role of Nutraceuticals in ailments like Diabetes, CVS diseases, Cancer, Irritable bowel syndrome and various Gastro intestinal diseases. Study of following herbs as health food: Alfa, Chicory, Ginger, Fenugreek, Garlic, Honey, Alma, Ginseng, Ashwagandha, Spirulina

HERBAL-DRUG AND HERB-FOOD INTERACTIONS: General introduction to interaction and classification. Study of following drugs and their possible side effects and interactions: Hypericum, kava-kava, Ginkobiloba, Ginseng, Garlic, Pepper & Ephedra.

UNIT - III**10 HOURS**

HERBAL COSMETICS: Sources and description of raw materials of herbal origin used via, fixed oils, waxes, gums colours, perfumes, protective agents, bleaching agents, antioxidants in products such as skin care, hair care and oral hygiene products.

HERBAL EXCIPIENTS: Herbal Excipients – Significance of substances of natural origin as excipients – colorants, sweeteners, binders, diluents, viscosity builders, disintegrants, flavors & perfumes.

HERBAL FORMULATIONS : Conventional herbal formulations like syrups, mixtures and tablets and Novel dosage forms like phytosomes

UNIT-IV**10 HOURS**

EVALUATION OF DRUGS: WHO & ICH guidelines for the assessment of herbal drugs Stability testing of herbal drugs.

PATENTING AND REGULATORY REQUIREMENTS OF NATURAL PRODUCTS: Definition of the terms: Patent, IPR, Farmers right, Breeder's right, Bio prospecting and Biopiracy. Patenting aspects of Traditional Knowledge and Natural Products. Case study of Curcuma & Neem.

REGULATORY ISSUES: Regulations in India (ASU DTAB, ASU DCC), Regulation of manufacture of ASU drugs - Schedule Z of Drugs & Cosmetics Act for ASU drugs.

UNIT - V**07 HOURS**

GENERAL INTRODUCTION TO HERBAL INDUSTRY: Herbal drugs industry: Present scope and future prospects. A brief account of plant based industries and institutions involved in work on medicinal and aromatic plants in India.

SCHEDULE T – GOOD MANUFACTURING PRACTICE OF INDIAN SYSTEMS OF MEDICINE: Components of GMP (Schedule – T) and its objectives Infrastructural requirements, working space, storage area, machinery and equipments, standard operating procedures, health and hygiene, documentation and records.

