28/08/2012

RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA

M.Pharm. (Pharmacognosy)

3rd Semester Elective Course Contents

Elective-I

MPY 301 PCG : STANDARDIZATION OF HERBAL DRUGS

Unit I

Sources of herbal raw materials, identification, authentication, collection and processing of herbal drugs. Seasonal and geographical variations, natural & artificial drying methods. Packaging & labeling of herbal drugs prior to extraction.

Unit II

Standardization techniques. WHO guidelines for assessing quality of herbal medicine. Determination of contaminants and residues, potentially hazardous contaminants and residues. Radioactive, biological, parasitic and chemical contaminants, Mycotoxins, endotoxins, agrochemical residues.

Unit III

Analysis of raw herbal extracts and their formulation using Thin Layer Chromatography, HPTLC, Gas Chromatography, HPLC, UV-visible spectroscopy and IR spectroscopy. Cytomorphological examination of raw material and finished products. Analytical pharmacognosy, drug adulteration and detection.

Unit IV

Analytical procedures and screening of vegetable materials for phenolic compounds, terpenoilds, organic acids, lipids and related compounds, nitrogen compounds, sugars and their derivatives, macro-molecules.

Unit V

A study of taxonomy and chemotaxonomy of plant drugs. Rules of plant nomenclature and modern trends in taxanomy. Study of important families of medicinal and phytogenetic importance. Phytogeography and phytogeographical distribution of medicinal plants with special reference to India.

Book Recommended:

1 Quality control of herbal drugs: approach for evaluation of botanicals, Pulok Mukherjee.
2 Herbal Drug Technology by S. S. Agrawal & M. Paridhavi.
3 Modern Methods of Plant Analysis by Peach & Tracey
4 Pharmacognosy by Tyler, Brady, Robbers
5 Recent Advances in Phytochemistry by Scikel Runeckles, Appletion Century Crofts
6 Cultivation Utilization of Aromatic Plants by Atal C K and Kapoor B M
7 Plant Taxonomy by Swain T.

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3rd Semester Elective Course Contents

Elective-II

MPY 302 PCG : BIOLOGICAL SCREENING OF CRUDE DRUGS

Unit I

Methods for investigation of biosynthetic pathways, such as tracer technique and auto radiography. General biosynthetic studies of pyridine, piperidine, tropane, quinoline, isoquinoline, indole and phenanthrone types of alkaloids of pharmaceutical significance. Biosynthesis of steroids, cardiac glycosides, flavanoids, coumarins & saponins.

Unit II

Protocols and screening methods of drugs for following Pharmacological activities

- Antidiabetic.
- Anti-inflammatory.
- Antihepatotoxic
- Antifertility.
- Diuretic.

Unit III

Study and screening of natural products and phytomedicines used for :

- Gastro intestinal and billiary disorders
- Cardio vascular system
- Respiratory system
- Skin
- Supportive and protectives for stress and ageing
- Endocrines

Unit IV

Study and screening of plant drugs used as anticancer, antimalarial, antihypertensive, hypolipidemic and adaptogenic agents. Important drugs affecting C. N. S.

Unit V

Ethanomedicine in India. Drugs and pharmaceuticals from marine sources with special reference to cardiovascular, antimicrobial and anti-inflammatory compounds. Relationship between chemical components and properties of herbal medicines.

Book Recommended :

1 Pharmacognosy and Phytotherapy: Heinrich, Barnes, Gibbon and Willamson – Chenchil, Living Stone, London
2 Pharmacognosy by Trease and Evants
3 Pharmacognosy, Phytochemistry and Medicine Plants – Brunton
4 W. H. O. Monographs on herbal drugs
5 Herbal Medical Products, by Fruke Gaedeke and Brbare Steinholf.
6 Pharmacognosy, Phytochemistry and Medicinal Plants by Wagner

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M.Pharm. (Pharmacognosy)
3rd Semester Elective Course Contents
Elective-III

MPY 303 PCG : INDUSTRIAL PHARMACOGNOSY

Unit I

Herbal Formulations: Formulation considerations of herbal infusion, decoction, lotion, washes, insect repellents, tincture, syrups, compresses, poultice, plasters, ointments, oils, tablets and capsules. Herbal cosmetics: Shampoo, Creams, Powder, Lotions, Lipsticks. Herbal essences, Aromatherapy, Herbal tea, Herbal hair oils and gel.

Unit II

Insecticides & pesticides of herbal origin and their suitable utilization. Disease management with medicinal & aromatic plant. Profile and technology for commercial scale cultivation, post harvest care processing and modern methods of herbal drug extraction. Potential of Indian herbal medicines.

Unit III

Manufacture and commerce of herbal pharmaceutical aids, pharmaceutical gum and their derivatives. Applications of microtome, camera lucida, polarizing and florescence microscope in evaluation of drugs. Microchemical tests as applied to crude drug and their chemical constituents.

Unit IV

Plant based industries of India and world involved in R&D work on medicinal and aromatic plants and manufacturing of herbal medicines. Regulatroy requirements for herbal medicine industries: Infrastructure, quality control, safety and stability, import and export of herbal products. Preparation of documents for new drug applications.

Unit V

Ayurvediv products. Techniques of preparation of ayurvedic dosage forms and their evaluation as per Ayurvedic Pharmacopoeia. Analysis of selected indigenous herbal formulations. Regulatory and safety requirements as per schedule of Drugs and Cosmetic act for herbal, ayurvedic and other drugs of traditional origin.

Book Recommended:

1 Drug & Cosmetic Act 1940.
2 Ayurvedic Pharmacopoeia Vol I, II & III, Gotham Medico Pvt. Ltd.
3 Indian Herbal Pharmacopoeia, by Handa S. S.
4 Pharmacopoeial Standard for Ayurvedic Formulations, Central Council for Research in Ayurveda & Siddha, New Delhi
5 Pharmacopoeial Standard of Herbal Plants, Karnik.
6 Cultivation of Medicinal and Aromatic Crops by Farooqui A A and Sreeramu B. S., University Press.

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M. Pharm. (Pharmacognosy)

3rd Semester Elective Course Contents

Elective-IV

MPY 304 PCG : HERBAL FOOD & NUTRACEUTICALS

Unit I

Introduction to nutraceuticals as science. Funtional foods and nutraceuticals.
Sources and role of tocotrienols, polyunsaturated fatty acids, sphingolipids, lecithin and choline. Vegetables, Cereals, milk and dairy products as functional foods.

Unit II

Nutritive and Non-nutritive food components with their potential health effects. Effect of processing on nutrients. Soya proteins and soya isoflavones in human health; Functional foods from wheat and rice and their health effects. Role of Dietary fibers and nuts in disease prevention. General ideas about role of probiotics and prebiotics as nutraceuticals.

Unit III

Structure, properties and functions of various nutraceuticals: Glucosamine, Octacosanol, Lycopene, Carnitine, Melatonin, Ornithine and alpha ketoglutarate. Use of proanthocyanidins, grape products, flax seed oil as nutraceuticals.

Unit IV

Food processing and preservation. General principles and techniques of food processing and food preservation. Shelf life of food and nutraceutical products. Food stability, method to enhance stability: freezing, lyophilization, and air drying techniques.

Unit V

Herbal food as remedies, anti-nutritional factors present in foods. Nutritional genomics, new technologies in development of nutraceuticals and functional foods. Packaging strategies for nutraceutical products, labeling and claims for nutraceutical products.

Books Recommended:

1 Essentials of Food and Nutrition, by Swaminathan M., Ganesh and Co.
2 Hand Book of Nutraceuticals and Functional Foods, Edited by Robert E. C. Wildman, Routledge publishers.
3 Nutraceuticals by L. Rapport and B. Lockwood, Pharmaceutical Press.
4 Dietary Supplements of Plant Origin, M. Maffei (Ed.) Taylor & Francis.
5 Food Packaging Principals and Practice, Gordon L. Robertson, Marcel and Dekker Inc. New York.