

**Dr.N. JEYALAKSHMI DEVI, M.D, D.G.O.,
ACADEMIC OFFICER**

Ref.No: ACII(4)/15528/2014

Date: 03.03.2015

To

The Principals of all Pharmacy Colleges
affiliated to this University.

Sir / Madam,

Sub: Academic – The Tamil Nadu Dr.M.G.R. Medical University, Guindy,
Chennai – Revised Syllabus for the subjects “Pharmacognosy and
Phytochemistry” of III year B.Pharm - Communicated– Reg.

Ref: Letter dated: 10.09.2014, received from the Principal
(Dr.A.Jerad Suresh), College of Pharmacy, Madras Medical College,
Chennai.

With reference to your letter cited, I am to inform you that the changes and shuffling of the topics for III B.Pharm Pharmacognosy and Phytochemistry paper - Theory has already been approved by the 48th meeting of the Standing Academic Board held on 02.07.2014 and communicated vide in the Uty's letter of even no and dated:18.08.2014.

Further, I am also inform you to implement the revised syllabus for the subjects “Pharmacognosy and Phytochemistry” of Third B.Pharm for the students admitted from the academic year 2014-2015. The copy of the same is enclosed for information and necessary action.

Kindly acknowledge the receipt of this letter.

Encl: As above

**Sd/-
ACADEMIC OFFICER**

THIRD YEAR B.PHARMACY DEGREE
3.1 PHARMACOGNOSY AND PHYTOCHEMISTRY

THEORY (Total 75 Hours)

1. Definition, history, present status, future scope & development of Pharmacognosy **3 Hours**
2. Classification of crude drugs **5 Hours**
Alphabetical, biological, chemical, pharmacological, taxonomical, chemotaxonomical & serotaxonomical.
3. Cultivation, collection, Processing & storage **6 Hours**
 - a. General principles of cultivation & collection of vegetable drugs of commercial significance from wild & cultivated source.
 - b. factors influencing cultivation of medicinal plants
 - c. Processing, storage and preservation of crude drugs
 - d. study of natural pesticides
4. Quality control of herbal drugs as per WHO guidelines **6 Hours**
Adulteration of crude drugs & their detection by evaluation methods. Introduction , morphological, microscopical, physical, chemical, biological analysis of herbal drugs.
5. Detailed study of crude drugs with emphasis on source, cultivation, collection, preparation, storage, diagnostic characters (macroscopic & microscopic techniques applicable), constituents, chemical tests, substitutes, adulterants & uses of: **45 hours**
 - a. **Carbohydrates and their derived products:** Agar, Gum Acacia, Gum tragacanth, honey, isapgol, pectin, starch
 - b. **Tannins:** gambier, Black catechu, Gall, Myrobalan(Pale catechu) and tannic acid.
 - c. **Lipids:** Castor oil, shark liver oil, wool fat, beeswax, neem oil, cod liver oil and bran oil
 - d. **Proteins:** Gelatin, spirulina and soya
 - e. **Volatile oils:** Mentha, Coriander, Cinnamon, Cassia, Caraway, Dill, Clove, Fennel, Nutmeg, cardamom, Lemon grass oil, Eucalyptus, sandalwood, Palmarosa and Citonellal
 - f. **Saponins:** Liquorice, Ginseng, Dioscorea
 - g. **Cardio active sterols:** Digitalis, Squill and Strophanthus
 - h. **Anthraquinone cathartics:** aloes, Senna, Rhubarb and Cascara
 - i. **Pyridine and Piperidine alkaloids:** areca and lobelia
 - j. **Tropane alkaloids:** Belladonna, Hyoscyamus, Datura, Coca
 - k. **Quinoline and isoquinoline alkaloids:** cinchona, Ipecac, and Opium
 - l. **Indole alkaloids:** Ergot, Rauwolfia, Nux vomica, Physostigmine
 - m. **Imidazoline:** Pilocarpus
 - n. **Steroidal:** Kurchi,
 - o. **Alkaloidal amines:** Ephedra, colchicum
 - p. **Glycoalkaloids:** Solanum species
 - q. **Purines:** Tea, coffee
 - r. **Resins:** Colophony, cannabis, Capsicum, Balsam of tolu, Benzoin, Balsam of Peru, Asafoetida, Turmeric and Ginger
 - s. **Quinazolidine alkaloids:** Adathoda
 - t. **Terpenes:** Neem, Artemisia
 - u. **Others:** Gentian, Saffron, Ashwagandha

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6. **Tumour inhibitors:** Taxol, Vinca and Podophyllum **2 Hours**
7. **Anti-hepatotoxic and oral hypoglycemic agents:** Phyllanthus niruri, Eclipta alba, Gymnema sylvestre **2 Hours**
8. **Plant fibres used as surgical dressings:** **4 Hours**
 - a. Cotton, silk, Wool, Nylon rayon, alginate dressing, gelatin sponge, oxidized cellulose
 - b. Sutures and ligatures
9. **Pharmaceutical aids:** Talc, Kaolin, Bentonite and natural colours **2 Hours**

PRACTICALS

1. Identification of crude drugs listed in theory (entire condition) by Morphological characters.
2. **Microscopical studies of some selected drugs** mentioned in theory; Datura, Digitalis, Senna, Vinca, Cinchona, Cinnamon, Clove, Nuxvomica, Ephedra, Rauwolfia, Ipecac, Ginger, Liquorice, Neem, Phyllanthus, Fennel and Coriander
3. **Microscopical studies of some selected powdered drugs** of single component or mixture of two components: Datura, cinchona, Cinnamon, senna, digitalis, Rauwolfia, liquorice, ipecac, Clove, nuxvomica, Rhubarb, Neem, Phyllanthus, Fennel, Coriander, Ginger and Ephedra.
4. **Identification of unorganized drugs** mentioned in theory by morphological characters and chemical tests
5. **Quantitative microscopy:**
 - a. Microscopical measurements of cells and cell contents: starch grains, calcium oxalate crystals and phloem fibres
 - b. Determination of leaf constants i.e., stomatal index, stomatal number, vein islet number, vein termination number and palisade ratio
 - c. Lycopodium spore method
6. To do simple chemical tests to identify the pharmaceutically important phytoconstituents based on theory

REFERENCES

1. Pharmacognosy- Varo E Tyler, Lynn R Brady, James E Robbers
2. Text book of Pharmacognosy – T.E. Wallis
3. Study of crude drugs – ed.4 - M.A. Iyengar
4. A text book of Pharmacognosy – Shah and Quadry
5. Anatomy of crude drugs – M.A. Iyengar and Nayak
6. pharmacognosy of powdered crude drugs - Iyengar and Nayak
7. Trease and Evans – Pharmacognosy- 14th and 15th edition
8. Pharmacognosy and Pharmaco biotechnology – James Robbers, marilyn K Speedice and Varro E Tyler
9. Drug plant Resources of Central Indian Inventory – Srivastava
10. Pharmacognosy – Ed.3 – Kokate C K, Purohit A P, Gokhale S B
11. Practical pharmacognosy by Rasheeduz Zafar and Neeraj Gandhi
12. Practical pharmacognosy – C K Kokate

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