



Faculty of Pharmacy
Diploma in Pharmacy (D. Pharm.)
(W. E. F.: 2023-24)
Document ID: SUTEFPHD-01

Name of Faculty	:	Faculty of Pharmacy
Name of Program	:	Diploma in Pharmacy
Course Code	:	1DPH02
Course Title	:	Pharmacognosy
Type of Course	:	Basic Pharmaceutical Sciences
Year of Introduction	:	2023-24

Prerequisite	:	Zeal to learn the subject														
Course Objective	:	<p>This course will discuss the following aspects of</p> <ol style="list-style-type: none"> 1. Occurrence, distribution, isolation, identificatio tests of common phytoconstituents 2. Therapeutic activity and pharmaceutical applications of various natural drug substances and phytoconstituents 3. Biological source, chemical constituents of selected crude drugs and their therapeutic efficacy in common diseases and ailments 4. Basic concepts in quality control of crude drugs and various system of medicines 5. Applications of herbs in health foods and cosmetics 6. Identification of the crude drugs based on their morphological characteristics 7. Various characteristic anatomical characteristics of the herbal drugs studied through transverse section 8. Physical and chemical tests to evaluate the crude drugs 														
Course Outcomes	:	<p>Upon successful completion of this course, the students will be able to</p> <table border="1"> <tr> <td>CO1</td> <td>Remember and identify the important/common crude drugs of natural origin</td> </tr> <tr> <td>CO2</td> <td>Describe & understand the uses of herbs in nutraceuticals and cosmeceuticals</td> </tr> <tr> <td>CO3</td> <td>Remember the principles of alternative system of medicines</td> </tr> <tr> <td>CO4</td> <td>Evaluate the importance of quality control of drugs of natural origin</td> </tr> <tr> <td>CO5</td> <td>Identify and evaluate the given crude drugs based on the morphological characteristics</td> </tr> <tr> <td>CO6</td> <td>Apply the knowledge given and take a transverse section of the given crude drugs</td> </tr> <tr> <td>CO7</td> <td>Describe and evaluate the anatomical characteristics of the given crude drug under microscopical conditions</td> </tr> </table>	CO1	Remember and identify the important/common crude drugs of natural origin	CO2	Describe & understand the uses of herbs in nutraceuticals and cosmeceuticals	CO3	Remember the principles of alternative system of medicines	CO4	Evaluate the importance of quality control of drugs of natural origin	CO5	Identify and evaluate the given crude drugs based on the morphological characteristics	CO6	Apply the knowledge given and take a transverse section of the given crude drugs	CO7	Describe and evaluate the anatomical characteristics of the given crude drug under microscopical conditions
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	C08	Carry out the physical and chemical tests to evaluate the given crude drugs
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Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
L	T	P		Theory Marks		Practical Marks		Total Marks
			C	SEE	CIA	SEE	CIA	
03	01	03	06	80	20	80	20	200

Legends: L-Lecture; T-Tutorial/Teacher Guided Theory Practice; P - Practical, C - Credit, SEE - Semester End Examination, CIA - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)

Course Content

Unit No.	Topics	Teaching Hours	Weightage	Mapping with COs
1	Definition, history, present status and scope of Pharmacognosy	2	2.66%	CO1 CO2
2	Classification of drugs: <ul style="list-style-type: none"> ● Alphabetical ● Taxonomical ● Morphological ● Pharmacological ● Chemical ● Chemo-taxonomical 	4	5.33%	CO1 CO6
3	Quality control of crude drugs: <ul style="list-style-type: none"> ● Different methods of adulteration of crude drugs ● Evaluation of crude drugs 	6	8.00%	CO3 CO7 CO8
4	Brief outline of occurrence, distribution, isolation, identification tests, therapeutic activity and pharmaceutical applications of alkaloids, terpenoids, glycosides, volatile oils, tannins and resins.	6	8.00%	CO3 CO5 CO6 CO7
5	Biological source, chemical constituents and therapeutic	30	40.00%	CO1 CO2

efficacy of the following categories of crude drugs.				CO3 CO7
Laxatives	Aloe, Castor oil, Ispaghula, Senna			
Cardiotonic	Digitalis, Arjuna			
Carminatives and G.I. regulators	Coriander, Fennel, Cardamom, Ginger, Clove, Black Pepper, Asafoetida, Nutmeg, Cinnamon			
Astringents	Myrobalan, Black Catechu, Pale Catechu			
Drugs acting on nervous system	Hyoscyamus, Belladonna, Ephedra, Opium, Tea leaves, Coffee seeds, Coca			
Anti-hypertensive	Rauwolfia			
Anti-tussive	Vasaka, Tolu Balsam			
Anti-rheumatics	Colchicum seed			
Anti-tumour	Vinca, Podophyllum			
Antidiabetics	Pterocarpus, Gymnema			
Diuretics	Gokhru, Punarnava			
Anti-dysenteric	Ipecacuanha			
Antiseptics and disinfectants	Benzoin, Myrrh, Neem, Turmeric			
Antimalarials	Cinchona, Artemisia			
Oxytocic	Ergot			
Vitamins	Cod liver oil, Shark liver oil			
Enzymes	Papaya, Diastase, Pancreatin, Yeast			
Pharmaceutical Aids	Kaolin, Lanolin, Beeswax, Acacia, Tragacanth, Sodium alginate, Agar, Guar gum, Gelatine			
Miscellaneous	Squill, Galls, Ashwagandha, Tulsi, Guggul			

6	Plant fibres used as surgical dressings: Cotton, silk, wool and regenerated fibres Sutures – Surgical Catgut and Ligatures	3	4.00%	CO1 CO5
7	<ul style="list-style-type: none"> •Basic principles involved in the traditional systems of medicine like: Ayurveda, Siddha, Unani and Homeopathy •Method of preparation of Ayurvedic formulations like: Arista, Asava, Gutika, Taila, Churna, Lehya and Bhasma 	8	10.66%	CO1 CO2
8	Role of medicinal and aromatic plants in national economy and their export potential	2	2.66%	CO4 CO6
9	Herbs as health food: Brief introduction and therapeutic applications of: Nutraceuticals, Antioxidants, Pro-biotics, Pre-biotics, Dietary fibres, Omega-3-fatty acids, Spirulina, Carotenoids, Soya and Garlic	4	5.33%	CO3 CO4
10	Introduction to herbal formulations	4	5.33%	CO6
11	Herbal cosmetics: Sources, chemical constituents, commercial preparations, therapeutic and cosmetic uses of: Aloe vera gel, Almond oil, Lavender oil, Olive oil, Rosemary oil, Sandal Wood oil	4	5.33%	CO6 CO7
12	Phytochemical investigation of drugs	2	2.66%	CO1

Suggested List of Experiments

Sr. No.	Name of Experiment	Teaching Hours
1	Morphological Identification of the following drugs: Ispaghula, Senna, Coriander, Fennel, Cardamom, Ginger, Nutmeg, Black Pepper, Cinnamon, Clove, Ephedra, Rauwolfia, Gokhru, Punarnava, Cinchona, Agar.	25
2	Gross anatomical studies (Transverse Section) of the following drugs: Ajwain, Datura, Cinnamon, Cinchona, Coriander, Ashwagandha, Liquorice, Clove, Curcuma, Nux vomica, Vasaka Gel: Sodium alginate gel Liniment: Turpentine liniment, White liniment BPC Dry powder: Effervescent powder granules, Dusting powder	25



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	Sterile Injection: Normal Saline, Calcium gluconate Injection Hard Gelatin Capsule: Tetracycline capsules Tablet: Paracetamol tablets	
3	Physical and chemical tests for evaluation of any FIVE of the following drugs: Asafoetida, Benzoin, Pale catechu, Black catechu, Castor oil, Acacia, Tragacanth, Agar, Guar gum, Gelatine.	25

Suggested List of Assignments

Sr. No.	Name of Assignments	Teaching Hours
1	Market preparations of various dosage forms of Ayurvedic, Unani, Siddha, Homeopathic (Classical and Proprietary), indications, and their labelling requirements	03
2	Market preparations of various herbal formulations and herbal cosmetics, indications, and their labelling requirements	03
3	Herb-Drug interactions documented in the literature and their clinical significances	03

Field Visit

Sr. No.	Field Visit	Duration (Hours)
1	The students shall be taken in groups to a medicinal garden to witness and understand the nature of various medicinal plants discussed in theory and practical courses. Additionally, they shall be taken in groups to the pharmacies of traditional systems of medicines to understand the availability of various dosage forms and their labelling requirements. Individual reports from each student on their learning experience from the field visit shall be submitted.	03

Suggested Distribution of Theory Marks Using Bloom's Taxonomy

Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
Weightage	25	12.5	12.5	-	50	-

NOTE: This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.



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Major Equipment/ Instruments and Software Required

Sr. No.	Name of Major Equipment/ Instruments and Software
1	Microscopes
2	Permanent Slides for various tissues
3	Models for various plants
4	Digital Balance (10 mg Sensitivity)
5	Refrigerator
6	Projection microscope
7	Permanent slide set of plants and charts for Pharmacognosy Lab
8	Drug information resources

Suggested Learning Websites

Sr. No.	Name of Website
1	https://pci.nic.in/pdf/Syllabus_B_Pharm.pdf
2	https://www.aicte-india.org/downloads/bpharma.pdf
3	https://www.ipc.gov.in/
4	https://www.ayush.gov.in/
5	https://ayudmla.gujarat.gov.in/home.php
6	https://www.fda.gov/
7	https://www.pharmacopoeia.com/
8	https://ipapharma.org/
9	https://gpat.nta.nic.in/
10	https://drnaitiktrivedi.com/
11	https://gdc4gpat.com/course/gpat/
12	https://niscpr.res.in/
13	https://delnet.in/
14	https://ihubgujarat.in/
15	https://www.ssipgujarat.in/



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Reference Books

Sr. No.	Name of Reference Books
1	Text book of Pharmacognosy by C. K. Kokate, S. B. Gokhale, A.P.Purohit, Nirali Prakashan
2	Text book of Pharmacognosy by C.S. Shah and J. S. Qadry, CBSPublishers & Distributors Pvt. Ltd.
3	Text Book of Pharmacognosy by T. E. Wallis. CBS Publishers & DistributorsPvt. Ltd.
4	Study of crude drugs by M. A. Iyengar, Manipal Press Ltd, Manipal
5	Powder crude drugs by M. A. Iyengar, Manipal Press Ltd, Manipal
6	Anatomy of crude drugs by M. A. Iyengar, Manipal Press Ltd, Manipal
7	Augmented Text Book of Homeopathic Pharmacy by Dr. D D Banerjee, B JainPublishers (P) Ltd