Module Specifications (PHG 112)

1. Module Data												
Programme Code(s)	P11330											
Programme Title	Bachelor of Pharmacy (PharmD)											
Host Faculty	**Pharmacy**											
Host Department	**Pharmacognosy**											
Module Code:	**PHG 112**											
Module Title:	**Pharmacognosy**											
Module Level*:	3	√	4		5		6		7		Year/Sem:	**1/2**
*** Level: Preparatory Year and Freshman Year modules are equivalent to Level 3 according to QAA categorization. Year 2 (Sophomore) modules are equivalent to Level 4, Year 3 (Junior) modules are equivalent to Level 5, and Year 4,5 (Senior) modules are equivalent to Level 6.**												
Credit Units/Hours:	**3**											
Contact Hours:	**Theoretical: 2**									**Practical: 2**		
Pre-requisite/s	**Medicinal Plants**											

2. Aims/Objectives:

This module aims at enabling the students to understand the importance of crude drugs as drug leads. Within this module the students will be familiar with some examples from seeds, fruits, herbs, subterranean organs, unorganized drugs in addition to drugs of animal origin that are used in pharmaceutical preparation for their medicinal importance

3. Mapping MLO to programme and NARS key elements

NARS Key element	Programme Key element	Module learning outcome (MLO)
1-1-1 Demonstrate understanding of knowledge of pharmaceutical, biomedical, social, behavioral, administrative, and clinical sciences.	1-1-1-1 Utilize comprehended knowledge of principles of basic and pharmaceutical sciences.	1-1-1-1-1 Utilize the basics of plant morphological and anatomical characters to use in the preparation of pharmaceuticals from crude drugs of seeds, fruits, herbs and subterranean organs as well as unorganized drugs & drugs of animal origin
1-1-3 Integrate knowledge from fundamental sciences to handle, identify, extract,	1-1-3-3 Integrate knowledge from fundamental sciences to design, analyze, and assure quality of	1-1-3-3-1 Design combinations of different drugs from the studied organs whether in entire or powdered forms for use in herbal medicine according to pharmacopoeial criteria comparing the

design, prepare, analyze, and assure quality of synthetic/natural pharmaceutical materials/products.	synthetic/natural pharmaceutical materials/products.	uses, side effects and contraindications of these combinations.
1-1-4 Articulate knowledge from fundamental sciences to explain drugs' actions and evaluate their appropriateness, effectiveness, and safety in individuals and populations.	1-1-4-1 Apply knowledge of information from fundamental sciences to explain pharmacological and toxicological effects of drugs.	1-1-4-1-1 Correlate the active constituents to the pharmacological actions, uses, toxicity, contraindications and side effects of medicinal plants of different organs (seeds, fruits, herbs and subterranean organs as well as unorganized drugs & drugs of animal origin)
2-2-1 Isolate, design, identify, synthesize, purify, analyze, and standardize synthetic/natural pharmaceutical materials.	2-2-1-2 Use microscopical examination to identify plant parts in their crude and powdered form.	2-2-1-2-1 Examine important crude drugs (from seeds, fruits, herbs and subterranean organs) microscopically as transverse sections or in powdered form
2-3-1 Handle, identify, and dispose biologicals, synthetic/natural materials, biotechnology-based and radio-labeled products, and other materials/products used in pharmaceutical field.	2-3-1-1 Handle, identify, and dispose synthetic/natural materials used in pharmaceutical field.	2-3-1-1-1 Identify different classes of the active constituents used in pharmaceutical field by chemical tests
2-2-6 Maintain public awareness on social health hazards of drug misuse and abuse	3-2-6-1 Develop and promote public awareness on the health hazards and social implications of synthetic/natural drug abuse.	3-2-6-1-1 Study the health hazards and social impact of natural drug abuse.

4-1-1 Demonstrate responsibility for team performance and peer evaluation of other team members, and express time management skills.	4-1-1-1 Demonstrate effective communication and team work skills and enhance time management abilities.	4-1-1-1-1 Work cooperatively in a team within monitored time frame.
4-1-2 Retrieve and critically analyze information, identify and solve problems, and work autonomously and effectively in a team.	4-1-2-1 Retrieve information and critically analyze results in order to identify and solve a given problem, through working in a team as well as independently.	4-1-2-1-1 Manage the use of the library and internet resources by the team.
4-3-2 Practice independent learning needed for continuous professional development.	4-3-2-1 Practice independent learning through a variety of sources, including libraries, databases and internet.	4-3-2-1-1 Develop self-motivation for independent and continuous education.

4. Indicative Content:	
A- Theoritical Content	**MLOs**
1. Introduction to seeds and medicinally important drugs from seed origin	1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1
2. Introduction to fruits and medicinally important fruits	1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1
3. Introduction to herbs and subterranean organs and examples of medicinally important plants of these organs	1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1
4- Introduction to unorganized drugs in addition to drugs of animal origin	1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1

4. Indicative Content:	
B- Practical/Tutorial Content	**MLOs**
1. Identification of medicinally important drugs from seed origin	2-2-1-2-1
2 . Identification of medicinally important drugs from fruit, herb and subterranean origin	2-2-1-2-1
3. Identification of unorganized drugs	2-2-1-2-1
4.Assignment presentation and group discussion	4-1-1-1-1, 4-1-2-1-1, 4-3-2-1-1

5.Learning and Teaching Activities	
Week	A-Lecture
1	Introduction to seeds
2	Official Seeds- non official seeds : Linseed, Black & White mustard
3	Foenugreek, Strophanthus, Nux vomica
4	Cardamom, Nutmeg, psyllium, nigella, colchicum, Castor seeds and others Quiz 1
5	Introduction to fruits
6	Umbelliferous Fruits (*Ammi visnaga*, *Ammi majus*)
7&8	**MID-TERM EXAMS**
9	Anise, star anise, hemlock, Fennel, Bitter orange peel, , milk thistle, common wheat, hawthorn berry,, vanilla pods
10	Introduction herbs, herbs containing alkaloids (Ergot, Vinca, Lobelia, Ephedra)
11	Herbs containg volatile oils (thyme,mentha), herbs containg resin (cannabis) thallophyta yeast, Cetraria, carrageen
12	Introduction of subterranean organs, Liquorice, Rhubarb, Ginger Quiz 2
13	Rawolfia and Curcuma, Ginseng, Garlic, Valerian,Squill, Echinaceae Introduction to unorganized drugs (classification & some examples)
14	Drugs of animal origin (some important examples)
15	**FINAL EXAMS**

5. Learning and Teaching Activities	
Week	B- Laboratory
1	Introduction Seeds, linseed,
2	Black Mustard , Foenugreek and Cardamom seeds
3	Introduction of herbs, Mentha+ Lobelia
4	Introduction- Fruits , Umbelliferous Ammi visnaga ,Anise
5	Revision
6	Practical I
7&8	**MID-TERM EXAMS**
9	Fennel , capsicum
10	Introduction subterranean, Liquorice,
11	Ginger+ Rhubarb
12	Unorganized drugs:, Agar,Gelatin, Aloe, Myrrh
13	Revision
14	Practical II
15	**FINAL EXAMS**

6. Teaching and Learning Methods/Strategies		
Teaching methods/ strategies	**Applied strategy**	**MLO**
Lectures	√	1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1
Practical Work	√	2-2-1-2-1
Tutorials		
Hybrid Learning	√	1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1

Learning methods/ strategies	Applied strategy	MLO
Turnitin Assignments	√	1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1 4-1-1-1-1, 4-1-2-1-1, 4-3-2-1-1
Case Study	√	1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1
Virtual Labs	√	2-2-1-2-1
Problem Solving	√	1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1
Team Based Learning (Group Discussion, Group Presentations, Projects)	√	4-1-1-1-1, 4-1-2-1-1, 4-3-2-1-1
Computer based learning Interactive teaching Audio-visual aids	√	1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1
Community based learning (field training, site visits)	√	1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1
Flipped Classroom		

Strategy/ies for Teaching Students with Special Needs

Students with any physical challenges or temporary disabilities, which make their participation in practical activities difficult as well as on probation students are helped by :

- TAs during one to one meetings.
- Extra hours.
- Weekly assessment and positive feedback on their progress.

7. Required Resources/ Facilities

Lecture and laboratory rooms with computers and data show
Internet access in lecture halls.
Equipped labs with glassware, microscopes, chemicals and solvents.

8. Assessment Methods and Tools:

MLO	Assessment Method/s	Assessment Tool	Assessment Type	Timing	Weight
1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1	Quiz 1	MCQ questions, true or false Complete	*SUMMATIVE*	Week 4	2.5

1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1	Quiz 2	MCQ questions, true or false Complete	*SUMMATIVE*	Week 12	2.5
1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1	Midterm exam	Complete MCQ questions Give reason Comparison Short notes Diagram identification True or false with justification	*SUMMATIVE*	Week 7 & 8	30
1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1, 4-1-1-1-1, 4-1-2-1-1, 4-3-2-1-1	Assignments	monograph &discussion	*SUMMATIVE*	Due variable	15
2-2-1-2-1	Practical exams	Identification of unknown herbal drug both in powder and entire form	*SUMMATIVE*	Week 6 & 14	40
1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1	Final exam	Complete, MCQ questions Give reason, Comparison Short notes Diagram identification True or false with justification	*SUMMATIVE*	After week 14	60
1-1-1-1-1, 1-1-3-3-1, 1-1-4-1-1, 2-3-1-1-1, 3-2-6-1-1	Formative assessment	Socrative , quizizz, online quizzes	*FORMATIVE*	Whole semester	0
Total					150
Are students required to pass all components in order to pass the module? * The pass mark for the whole module is 60%, however, students should achieve at least 30% of the final exam mark. **The grading mode used is marks					NO

9.Indicative Module Materials and Reading Texts:	
A. Notes	Lecture power point presentation (uploaded on e-learning)
B. Module Textbook	Evans, W. C., Trease and Evans Pharmacognosy, Edinburgh, London, New York, Oxford, Philadelphia, St. Louis and Toronto, 16thed, (2010) Elsevier, ISBN 0702041890, 9780702041891
C. Suggested Reference Books	• Narayana, P. S., Pullaiah, T., Varalakshmi, D., Textbook of Pharmacognosy, Vol.2 (2014), CBS Publishers. ISBN9788123923895

D. Suggested Periodicals/ Journals	1- Phytochemistry 2- Journal of Pharmacognosy and Phytochemistry 3- Journal of Integrative Medicine
E. Useful Websites	http://www.hort.purdue.edu/newcrop/med- aro/default.html http://www.herbmed.org/ http://www.danish-schnapps-recipes.com/plants.html http://www.botanical.com/

10. **KIS Data**		
Activity	Contact hours / semester	Overall percentage of total
Scheduled teaching	24	20%
Guided Independent Study	72	60%
Practical Work or Tutorial	24	20%
Total	120	100%
N.B. Each contact hour of lecture the students will need 2 hours of independent study while for each contact hour of tutorial or practical the students will need 1 hour of independent study.		

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