

DEPARTMENT OF BOTANY				CLASS: I PG				
Sem	Course Type	Course Code	Course Title	Credits	Contact Hours/week	CIA	Ext	Total
I	Non-Major Elective-1	21P1BNM1	Medicinal Botany	2	2	25	75	100

Nature of Course			
Knowledge and skill	✓		Employability oriented
Skill oriented	✓		Entrepreneurship oriented

Objectives

- To gain knowledge on indigenous and traditional medicinal systems
- To understand the medicinal plant diversity and their conservation.
- To know the medicinally important phytochemicals and their extraction methods.

Unit	Content	CLO	K level	Hours
I	Introduction - Historical background - scope; Indigenous medicinal systems in India - Siddha, Ayurveda, Unani, homeopathy - ethnomedicine. Need to preserve traditional knowledge systems	1	Up to K2	6
II	Importance of Indian medicinal plants - bioprospection - hotspots-endemic medicinal plants - importance of medicinal plants of Tamil Nadu; Senna, Gymnema, Curcuma, Catharanthus, Aloe and Gloriosa.	2	Up to K2	6
III	Phytochemicals and their types, extraction and purification methods of plant constituents - medicinal importance of alkaloids, glycosides, flavonoids and volatile oils	3	Up to K2	6
IV	Collection and harvest technology of medicinal herbs - factors responsible for deterioration of medicinal drugs-storage, processing - packaging of crude drugs.	4	Up to K2	6
V	Conservation of medicinal plants - in situ and ex situ methods - centres of medicinal plant conservation in India - IBPGRI, CIMAP-CDRI, NBGRI, TBGRI and TAMPCLOL.	5	Up to K2	6

Rationale for Nature of the Course:

Gained knowledge on indigenous medicinal systems and the medicinal plant diversity
Skill on extraction of phytochemicals and conservation of medicinal plants

Activities having direct bearing on Skill development / Employability / Entrepreneurship

Industrial visit to acquaint with the skills on extraction methods.

Pedagogy:

Chalk and Talk, PPT, Group Discussion, Seminar, Interaction, Problem Solving, Quiz, Virtual Labs & Learning Management System (CANVAS).

Course Learning Outcomes:

CLOs	CO Statement	Knowledge Level
Students will be able to know, understand, apply, and analyse		
CLO -1	the indigenous and traditional medicinal systems in India	Up to K2
CLO -2	the medicinal plant diversity with important medicinal plants	Up to K2
CLO -3	the extraction methods of various phytochemicals	Up to K2
CLO -4	the practical skills on collection and storage of crude drugs	Up to K2
CLO -5	the methods of conservation of medicinal plants and contributions of medicinal plant centres of India	Up to K2

Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CLO1	2	3	1	1	3
CLO2	1	3	1	3	3
CLO3	2	1	1	2	2
CLO4	3	3	1	2	3
CLO5	2	2	1	3	3

Lesson Plan

Unit	Description	Hours	Mode
I	Introduction - Historical background - scope; Indigenous medicinal systems in India - Siddha, Ayurveda, Unani, homeopathy - ethnomedicine. Need to preserve traditional knowledge systems.	2 2 2	Chalk and talk PPT, LMS and Group discussion
II	Importance of Indian medicinal plants - bioprospection - hotspots- endemic medicinal plants - importance of medicinal plants of Tamil Nadu; Senna, Gymnema, Curcuma, Catharanthus, Aloe and Gloriosa.	4 2	Chalk and talk PPT, LMS and Group discussion
III	Phytochemicals and their types, extraction and purification methods of plant constituents - medicinal importance of alkaloids, glycosides, flavonoids and volatile oils. Biochemical and physical factors in fruit development. Parthenocarpy. Prospects and significance of embryo, pollen and endosperm culture.	3 3	Chalk and talk PPT, LMS and Group discussion
IV	Collection and harvest technology of medicinal herbs - factors responsible for deterioration of medicinal drugs- storage, processing - packaging of crude drugs.	6	Chalk and talk PPT, LMS and Group discussion
V	Conservation of medicinal plants - <i>in situ</i> <i>Ex situ</i> methods - centres of medicinal plant conservation in India - IBPGRI, CIMAP-CDRI, NBGRI, TBGRI and TAMPCLOL.	2 4	Chalk and talk PPT, LMS and Group discussion
	Total	75	

Course designer: Prof. S. Karuppusamy, Assistant Professor

Learning Outcome Based Education & Assessment (LOBE)
Blue Print – PG BOTANY NME FORMATIVE EXAMINATIONS (CIA-I & II)
Articulation Mapping – K Levels with Courses Learning Outcomes (CLOs)

CLOs	K- Level	Section A		Section B		Section C	
		Short Answers		(Either/or Choice)		(Open Choice)	
		No. of Questions	K- Level	No. of Questions	K- Level	No. of Questions	K- Level
CLO x	Up to K2	1	K1	1	K2/K2	1	K1
CLO y	Up to K2	2	K1	1	K2/K2	2	K1
No. of Questions to be asked		3		2		3	
No. of Questions to be answered		3		2		2	
Marks for each question		2		7		10	
Total Marks for each section		6		14		20	

Learning Outcome Based Education & Assessment (LOBE)
Blue Print – PG BOTANY NME - SUMMATIVE EXAMINATIONS

Units	CLOs	K- Level	Section A		Section B		Section C Essay
			Short Answers		Paragraph (Either/or Choice)		
			No. of Questions	K- Level	No. of Questions	K- Level	
1	CLO 1	Up to K2	2	K1 & K1	2	1 K2	1 K1
2	CLO 2	Up to K2	2	K1 & K1	2	1 K2	1 K1
3	CLO 3	Up to K2	2	K1 & K1	2	1 K2	1 K1
4	CLO 4	Up to K2	2	K1 & K1	2	1 K2	1 K1
5	CLO 5	Up to K2	2	K1 & K1	2	1 K2	1 K1
No. of Questions to be asked			10			10	5
No. of Questions to be answered			5			5	2
Marks for each question			2			7	10
Total Marks for each section			10			25	20

Distribution of Section-Wise Marks with K Levels

K Levels	Section A (No Choice)	Section B (No Choice)	Section C (No Choice)	Section D (No Choice)	Total Marks	% of Marks (without choice)	Consolidated
K1	10	-	50	-	60	46.15	100
K2	-	70	-	-	70	53.85	
K3	-	-	-	-	-	-	-
K4	-	-	-	-	-	-	-
Total Marks	10	35	50	-	130	100.00	100