



Course Title: Plant Science-II
Course Code: LS104
Credit Units: 4

L	T	P/S	SW/FW	TOTAL CREDIT UNITS
3	0	2	0	4

Course Objective:

Familiarize the students about most important plant group, angiosperms.

Prerequisites: Plant Science I

Student Learning Outcomes: The students will be able to:

- create understanding of angiosperms with regards to anatomy, embryology.
- classify different types of angiosperm
- describe basic and applied concepts of angiosperm
- develop understanding for economic value of plants
- demonstrate laboratory practices and skills with regard to angiosperm

Course Contents/Syllabus-Theory:

	Weightage (%)
Module I	
Classification as proposed by Bentham and Hooker and Hutchinson. Merits and demerits of the proposed classifications. Broad outline of knowledge about various types of inflorescence, sepals, petals, androecium, gynoecium and fruits. Outline how to identify the angiosperms taxa	30

including floral formula and floral diagram.	
Module II	
Broad features with regards to diversity in Dicotyledons. Type study: Cucurbitaceae, Fabaceae, Asteraceae, Cruciferae, Solanaceae, Labiatae.	20
Module III	
Broad features with regards to diversity in Monocotyledons. Type study: Poaceae, Palmae, Liliaeaceae.	10
Module IV	
Embryology: Structure of anther, microsporogenesis and development of the male gametophyte. Structure of Ovule, megasporogenesis and development of the female gametophyte with particular reference to <i>Polygonum</i> type. Fertilisation, Endosperm and embryo development. Structure of Monocot and Dicot seed.	20
Module V	
Plant Anatomy: Meristems. Structure of Xylem and Phloem in Monocot and Dicots. Anatomy of root, stem and leaf in Monocot and Dicots. Secondary growth. Anamalous anatomical structures in stem.	20

Pedagogy for Course Delivery:

Lectures: 39
 Tutorial: 0
 Class Test: 2
 Presentation/Assignment: 4
 Total: 45

Pedagogy for Lab/ Practical details:

Practical: 28
 Class Test: 2
 Total: 30

List of Experiments:

- T.S. of dicot and monocot root.
- T.S. of dicot and monocot stem.
- Anamalous anatomical structures in a few dicots and monocots.
- Description including identification, floral formula, floral diagram of species: *Pisum sativum*/*Lathyrus odoratus*, *Helianthus annuus*/*Tagetes erecta*, *Brassica olearacea*/*Iberis amara*, *Petunia alba*/*Datura stramonium*, *Triticum astivum*/*Zea maize*, *Allium cepa*/*Allium sativum*

- T.S. of anther, pollen fertility

Assessment/ Examination Scheme:

Theory L/T (%)	Lab/Practical/Studio (%)	Total (%)
75	25	100

Theory Assessment (L&T):

Continuous Assessment/Internal Assessment				End Term Examination
Components (Drop down)	Class Test	Attendance	Assignment/ Project/Seminar/Quiz	
Weightage (%)	15	5	10	70

Lab/ Practical/ Studio Assessment:

	Continuous Assessment/Internal Assessment				End Term Examination			
Components (Drop down)	Performance	Lab record	Viva	Attendance	Lab record	Performance	Viva	Total
Weightage (%)	10	5	10	5	10	40	20	100

Text:

- Modern Plant Taxonomy, N.S. Subryamanyam, 1st edition, Vikas Publishing House, 2006. ISBN: 0706993470
- Taxonomy, V. Singh & D.K. Jain, 1st edition, Rastogi Publication, 2009. ISBN No. 81-7133-849-6.
- The Embryology of Angiosperms, S.S. Bhojwani, S.P. Bhatnagar, 5th edition, Vikas Publishing House, 2009. ISBN 10: **8125923462**
- A Text Book of Practical Botany ,Volume I, Ashok Bendre & Ashok Kumar, 7th edition, Rastogi Publications, 2012. ISBN: 81-7133-923-9
- A Text Book of Practical Botany , VolumeII, Ashok Bendre & Ashok Kumar,7th edition, Rastogi Publications, 2012. ISBN: 81-7133-877-1

