



Course Title: Plant Science
Course Code: LS202
Credit Units: 4

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

Course Objective:

The objective of this course is to familiarize the students with the classification, morphology, reproduction and economic importance of various groups of lower plants to the students which will provide the basic knowledge for the employment of these plants to study plant biotechnology.

Prerequisites: Life Sciences

Student Learning Outcomes: The students will be able to:

- discover knowledge-base of the plant sciences.
- classify different types of Plants
- describe basic and applied concepts of Plant Science
- explain functions and interactions of Plant Science
- develop understanding for plant physiology

Course Contents/Syllabus-Theory:

	Weightage (%)
Module I	
• General features, classification, modes of reproduction and evolutionary trends in algae, Algae as source of food, nutritional supplements, chemical, drug, fertilizer and biofuels. • General features, classification, modes of reproduction in fungi • General features, classification, modes of	35

reproduction in bryophytes, • General features, classification, modes of reproduction in pteridophytes, • General features, classification (Chamberlain's classification), modes of reproduction in gymnosperms • General features, and modes of reproduction in angiosperms	
Module II	
• Ascent of sap • Mineral nutrition -functional role and deficiency diseases of macro ,micro and trace elements • Phytohormones- Physiological roles of auxins, cytokinins, gibberellins, abscisic acid, ethylene and their applications in plant biotechnology • Stress physiology –effect of abiotic (drought, salinity, temperature) and biotic stress (insect, disease,competition)	20
Module III	
• Cereals –wheat, rice, maize, • Legumes-soyabean, groundnut ,pigeonpea, gram, lentil, moong, urd, • Oil yielding plants-sesame, coconut,sunflower,safflower, • Fibre yielding plants- cotton, hemp ,flax ,jute, coir • Spices and aromatic plants –coriander ,turmeric, asafetida ,fennel ,cumin, cardamom ,clove • Medicinal plants –belladonna, sacred basil, snakeroot, , periwinkle Neutraceutical plants –amaranthus, oat, millets.	30
Module IV	
• Air ,water ,soil pollution control by plants • Disaster management by plants.	15

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:

- Study of morphology and reproductory organs of algae, fungi, bryophytes, pteridophytes, gymnosperms (With the help of specimen and temporary permanent slides)
- Biochemical analysis to study the effect of abiotic stress on seed germination.
- To study the effect of auxins on rooting.
- Demonstration of herbicidal effects of auxins.
- Study of air, water, soil pollution and plants as a tool for its control.
- Identification of economically important plant as per syllabus

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 and References:

- Ganguli and Kar College Botany Vol. I (1988) and II (1989: New Central Book Agency, 4th edition, ISBN-13: 978-81-7381-178-4
- Taxonomy, V. Singh & D.K. Jain, 1st edition, Rastogi Publication, 2009. ISBN No. 81-7133-849-6.
- S.K.Verma and Mohit Verma A Textbook of Plant Physiology, Biochemistry and Biotechnology: S Chand, ISBN: 9788121906272
- B.P.Pandey, A Textbook of Botany Angiosperms: S Chand & Co. (2011) ISBN-13:9788121904049