



Course Title: Plant Science I

Course Code: LS102

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 lower plants.

Prerequisites: Biological Sciences

Student Learning Outcomes: The students will be able to:

- create understanding of various facets of lower plants from basic and practical application standpoint.
- classify different types of Plants
- describe basic and applied concepts of Plant Science
- develop understanding for economic value of plants
- demonstrate laboratory practices and skills with regard to lower plants.

Course Contents/Syllabus-Theory:

Module I	Weightage (%)
Descriptors/Topics: Algae <ul style="list-style-type: none">• Classification of algae• Broad features with regard to the morphological, ecological and reproductive diversity	20

<p>in fresh water and marine algae.</p> <ul style="list-style-type: none"> • Type study of <i>Nostoc</i>, <i>Chlamydomonas</i>, <i>Chara</i>, <i>Sargassum</i> and <i>Polysiphonia</i>. • Algae as source of food, nutritional supplements, drugs, fertilizers. and biofuels. 	
Module II	
<p>Descriptors/Topics: Fungi</p> <ul style="list-style-type: none"> • Classification of fungi, • Diversity in modes of nutrition, cell structure and reproduction. • Type study of <i>Phytophthora</i>, <i>Aspergillus</i>, and <i>Agaricus</i>. • Importance of fungi as food, medicine and nutritional supplements • Out line of fungal diseases. • Lichens and Mycorrhiza: salient features and economic importance 	20
Module III	
<p>Descriptors/Topics: Bryophytes</p> <ul style="list-style-type: none"> • Classification of Bryophytes • Broad features with regard to morphological, ecological and reproductive diversity. • Type study of <i>Marchantia</i>, and <i>Anthoceros</i> • Economic importance of bryophytes and their role as ecological indicators. 	20
Module IV	
<p>Descriptors/Topics: Pteridophytes</p> <ul style="list-style-type: none"> • Classification of Pteridophytes 	20

<ul style="list-style-type: none"> • Broad features with regard to morphological ,ecological and reproductive diversity • Type study : <i>Selaginella</i>, and <i>Marsilea</i> • Heterospory and evolution of seed habit • Telome theory, Stellar evolution. 	
Module V	
Descriptors/Topics: Gymnosperms <ul style="list-style-type: none"> • Classification of Gymnosperms (Chamberlain’s classification) • Broad features with regard to morphological, ecological and reproductive diversity. • Type study: <i>Cycas</i>, <i>Ginkgo</i> and <i>Pinus</i>.. • <i>Ginkgo</i>, a living fossil. • Economic importance of Gymnosperms. 	20

Pedagogy for Course Delivery:

Lectures: 39
 Tutorial: 00
 Presentation/ Seminar: 4
 Class Test: 2
 Total: 45

Lab/ Practical details, if applicable:

Tutorial: 00
 Practical: 28
 Class Test: 02
 Total: 30

List of Experiments

- Study of *Nostoc*, *Chlamydomonas*, *Chara*, *Sargassum*, and *Polysiphonia* (With the help of specimens and temporary /permanent slides)

- Study of *Aspergillus* and *Agaricus*. (With the help of specimens and temporary /permanent slides)
- Study of *Marchantia*, *Anthoceros* and Lichens (With the help of specimens and temporary /permanent slides)
- Study of *Selaginella* and *Marsilea* (With the help of specimens and temporary /permanent slides)
- Study of *Cycas* and *Pinus* (With the help of specimens and temporary/permanent slides)

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	Home Assignmen/Presentation/ Seminar	Attendance	
Weightage (%)	15	10	5	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 Books: Theory

- Ganguli and Kar, College Botany Vol. I (1988) and II (1889): New Central Book Agency. ISBN-13: **978-81-7381-178-4**

- V. Singh, P.C. Pande & D.K. Jain, A Text Book of Botany: Rastogi Publication (2013), **ISBN No.** 978-81-7133-904-4

Any other Study Material:

- Research Papers

Text & References (Lab):

Ashok Bendre & Ashok Kumar, A Text Book Of Practical Botany Volume I (2012-13) & Volume II (2012), Rastogi Publication **ISBN No.** 81-7133-923-9