



University of Kerala

Discipline	BOTANY				
Course Code	UK2DSCBOT104				
Course Title	PHYCOLOGY, MYCOLOGY AND PLANT PATHOLOGY				
Type of Course	DSC				
Semester	II				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours/Week
	04	03 Hours	-	02 Hours	05 Hours
Pre-requisites	No Pre-requisites				
Course Summary	The course includes a general account of thallophytes such as algae, fungi, lichens, and mycorrhiza. Each group discusses its classification, distinguishing characters, and economic importance. Type forms in each group give a detailed account of morphology, life cycle, and economic importance. Various agents of plant diseases, its management and control also covered in the course.				

Detailed Syllabus:

Module	Unit	Content	Hrs
I	Algae		10
	1	Classification of Algae by Fritsch (1935), General account of algal forms- - Thallus organization- Economic Importance.	
I	2	Habit, thallus structure, pigments, reproduction, and economic importance of the following classes Chlorophyceae – Oedogonium Phaeophyceae – Sargassum Rhodophyceae – Polysiphonia Myxophyceae- Nostoc	10
	Fungi		
II	3	Classification (Ainsworth,1973) -General Characters of fungi	10
	4	Brief account of Mastigomycotina, Zygomycotina, Ascomycotina, Basidiomycotina, and Deuteromycotina.	
	9	Structure and Life Cycle of Rhizopus and Puccinia.	
	10	Economic importance of Fungi	
III	Association in Fungi		03
	11	Lichens- Thallus structure and reproduction- economic and ecological importance- forms (Crustose, foliose, fruticose);	
	12	Mycorrhiza- Ectomycorrhiza-VAM-importance; Association between Ant and Fungi	
IV	Plant Pathology		07
	13	General Principles of Plant Disease Management and Therapy (brief account only)	

	14	Disease control- chemical-physical-biological and cultural methods-(Brief account only)	
	15	Causal organism, symptoms, transmission, and control measures of Citrus Canker, Tapioca Mosaic Disease, and Blast disease of Paddy.	
V	Applications of Algae and Fungi		15
	16	Industrial application of Algae- pharmaceuticals, cosmetics, food, nutraceuticals, biofuel, bioplastics, animal feed.	
	17	Industrial application of Fungi- Alcohol, organic acid, Enzymes, antibiotics, pharmaceuticals	
	18	Agricultural applications- biofertilizers, biocontrol of diseases and pests.	

Practicals		
	<ol style="list-style-type: none"> 1. Analysis of algal flora in a water body (natural/artificial) 2. Field visit for studying marine algal forms 3. Field observation and preparation of photo album- 4. Structure of plant body and reproductive structures of Nostoc, Oedogonium, Sargassum, Polysiphonia, Rhizopus and Puccinia. 5. Conduct a field survey to identify and document plant diseases 	30

Suggested Reading

1. Sharma, O. P. 2017. Textbook of Algae. Tata Mc Graw Hill Publ. Comp. Ltd. New Delhi
2. Singh V, Pandey PC and Jam D.K. .1998. A Text Book of Botany for Under Graduate Students, Rastogi Publications.
3. Vashishta, Singh & Singh (2011). Algae, Botany for Degree students, S Chand and Publishers
4. Vasishta B R and A K Sinha (2011). Botany for Degree Students Fungi . S Chand and Co Pvt Ltd.
5. Michael Carlile, Sarah C. Watkinson, Graham W. Gooday, 2001. The Fungi, Academic Press
6. Singh R.S. 2017. Introduction to Principles of Plant Pathology. 5th Edition. Medtech Publisher.
7. Mehrotra R.S. 2017. Plant Pathology. 3rd Edition. McGraw Hill Education
8. Dube H.C. 2014. Modern Plant Pathology. 3rd Edition, Agribios, New Delhi

Course Outcomes

No.	Upon completion of the course the graduate will be able to	Cognitive Level	PSO addressed
CO-1	Acquires knowledge of various algal forms, their classification, and economic importance. Analyze various forms of algae in nearby water bodies and express interest in the conservation of algal forms.	U, R	PSO-1,2

CO-2	Differentiates different classes of algae, its pigment system, and life cycle. Skill in morphological identification of type specimens.	U, An	PSO-1,2
CO-3	Recognize fungal forms in the surroundings on different seasons, and compare the variation in morphology, habitat, and reproductive peculiarities among fungi. Explore various ecosystems for fungal forms. Gains skill in isolation and staining of fungal forms.	K, U, An	PSO-1,5
CO-4	Attain the ability to isolate symbiotic forms from higher plants. Understand the importance of lichens in ecosystem conservation.	U, An	PSO-1,5
CO-5	Gains knowledge about various plant pathogens . Learn different methods to manage and control plant diseases.	U, Ap	PSO-1,2

R-Remember, U-Understand, Ap-Apply, An-Analyse, E-Evaluate, C-Create

Name of the Course: Phycology, mycology and Plant Pathology

Credits: 3:0:1 (Lecture:Tutorial:Practical:)

CO No.	CO	PO/PSO	Cognitive Level	Knowledge Category	Lecture (L)/Tutorial (T)	Practical (P)
1	1	1,2	U, R	F,C	L,T	
2	2	1,2	U, An	F,C	L,T	
3	3	1,5	K, U, An	F,C,P	L,T	P
4	4	1,5	U, An	C,P	L,T	P
5	5	1,2	U, Ap	F,C	L	P

F-Factual, C- Conceptual, P-Procedural, M-Metacognitive

Assessment Rubrics:

- Quiz / Assignment/ Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments
- Final Exam

Mapping of COs to Assessment Rubrics :

	Internal Exam	Assignment	Project Evaluation	End Semester Examinations
CO 1	✓			✓
CO 2	✓			✓
CO 3	✓		✓	✓
CO 4		✓		✓
CO 5		✓		✓