

Semester Lecture Plan (Theory)

Name of the college: Government College of Arts, Science and Commerce, Sanquelim		
Name of Faculty: Dr. Tanvi Nitin Prabhu	Subject: Botany	
Paper code: BOT 200	Program/Course: B.Sc (Botany)	Division: A
Academic Year: 2025-26	Semester: III	Total Lectures: 30
Course Objectives:		
1. Familiarize students with diverse groups of microbes and non-flowering plants. 2. Provide the ability to identify and classify microbes and non-flowering plant groups. 3. Impart knowledge of the morphology, life cycle, reproduction and economic importance of various microbes and non-flowering plants.		
Expected Course Outcome: On completion of the course, students will be able to:		
1. Identify and classify microbes and non-flowering plants based on their characteristic features. 2. Compare and contrast the morphological features within and between the groups for a comprehensive understanding of the basis of their classification. 3. Examine the life cycle and methods of reproduction of microbes and non-flowering plant groups. 4. Appraise the economic importance of microbes and non-flowering plants.		

Student Learning Outcome: On completion of the course, students will be able to: 1. Identify and classify microbes and non-flowering plants based on their characteristic features. 2. Compare and contrast the morphological features within and between the groups for a comprehensive understanding of the basis of their classification. 3. Examine the life cycle and methods of reproduction of microbes and non-flowering plant groups. 4. Appraise the economic importance of microbes and non-flowering plants.							
Month	Lectures		No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
	From:	To:					
June 2025	24.06.2025	30.06.2025	03	Module 1: Viruses, Bacteria and Fungi	To understand uses of plants to mankind	Chalk and board	Pandey, BP (2017). Botany for Degree Students: Biodiversity. S. Chand and Company Ltd., New Delhi.
				General structure, characteristics, origin and evolution of viruses			
				Major groups (DNA viruses, RNA viruses and retroviruses)			
July 2025	01.07.2025	05.07.2025	02	General account of replication of viruses	To understand interdisciplinary aspect of botany	Chalk and board	
				General account of replication of viruses			
July 2025	07.07.2025	12.07.2025	03	Characteristics of virus-like particles (viroids, virusoids and prions)	To understand branches of botany	Chalk and board	
				Introduction to bacteria			
				General characteristics of eubacteria and archaeobacteria			

July 2025	14.07.2025	19.07.2025	03	Shapes and arrangement of bacteria; ultrastructure of bacterial cell	To understand branches of botany	Chalk and board	
				Cell structure and morphology of cyanobacteria			
				Economic importance of Cyanobacteria			
July 2025	21.07.2025	26.07.2025	03	Multiplication in Bacteria	To understand evolutionary history of plants	Chalk and board	
				Genetic recombination in bacteria			
				conjugation, transformation and transduction			
July 2025 – August 2025	28.07.2025	02.08.2025	03	Economic importance of bacteria	How fossils are formed	Chalk and board	Vashishta, BR and Sinha, AK (2014). Botany for Degree Students: Fungi. S. Chand and Company Pvt. Ltd., New Delhi.
				General characteristics of Fungi			
				Ainsworth's classification of Fungi			
August 2025	04.08.2025	09.08.2025	03	morphological features of <i>Mucor</i> , <i>Aspergillus</i> , <i>Agaricus</i> and <i>Saccharomyces</i>	Peculiar characteristic of plants and their classification.	Chalk and board	
				ISA 01 (Assignment)			
				Reproduction (asexual, sexual and parasexual) in Fungi			
August 2025	11.08.2025	16.08.2025	02	ecological and economic importance of fungi	What are plant movements.	Chalk and board	
				general characteristics, types and significance of symbiotic fungal associations (lichens and mycorrhizae)			

August 2025	18.08.2025	23.08.2025	03	General characteristics of Algae, Smith's classification	To understand tropic responses in plants.	Chalk and board	
				Range of thallus structure			
				Life cycle patterns (haplontic, diplontic, isomorphic, heteromorphic, haplobiontic and diplobiontic).			
September 2025	01.09.2025	06.09.2025	01	ISA 02 (Test).	To study nastic movements.	Chalk and board	
September 2025	08.09.2025	13.09.2025	03	methods of reproduction in Algae	What are vital processes in plants.	Chalk and board	
				Morphological features of <i>Nostoc</i> , <i>Spirogyra</i> , <i>Sargassum</i> and <i>Polysiphonia</i> ; ecological and economic importance.			
September 2025	15.09.2025	20.09.2025	03	General characteristics; Smith's classification of Bryophytes	To understand process of osmosis and Imbibition.	Chalk and board	Vashishta, BR and Sinha, AK (2011). Botany for Degree Students: Bryophyta. S. Chand and Company Pvt. Ltd., New Delhi.
				methods of reproduction; morphological features of <i>Riccia</i> , <i>Anthoceros</i> and <i>Funaria</i> , Economic importance			
September 2025	22.09.2025	27.09.2025	03	General characteristics; Smith's classification; alternation of generations; morphology of early land plants (<i>Cooksonia</i> and <i>Rhynia</i>);	To understand principles and working of instruments used in Botany	Chalk and board	Vashishta, PC, Sinha, AK and Kumar, A (2010). Botany for Degree Students: Pteridophyta. S. Chand and Company Pvt. Ltd., New Delhi.
				morphological features and reproductive structures of <i>Psilotum</i> , <i>Selaginella</i> , <i>Equisetum</i> and <i>Pteris</i> , Economic importance of Pteridophyta			

September 2025- October 2025	29.09.2025	04.10.2025	03	heterospory and seed habit; stelar evolution		Chalk and board	
				General characteristics and life cycle; Coulter and Chamberlain’s classification of Gymnosperms			
October 2025	06.10.2025	11.10.2025	03	ISA 03		Chalk and board	
				Morphological features and reproductive structures of <i>Cycas</i> , <i>Pinus</i> and <i>Gnetum</i>			
October 2025	13.10.2025	18.10.2025	03	Ecological and economic importance		Chalk and board	
				Revision			

Assessment Rubrics

Component	Max Marks
ISA 1	7.5
ISA 2	7.5
ISA 3	7.5
Practical	25
Project	NA
Semester End Exam	60