



Institute of Botany
Faculty of Life Sciences
University of the Punjab, Lahore
Course Outline
Semester – III



Programme	BS Botany	Course Code	Bot-201	Credit Hours	3
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Course Title	Phycology & Bryology (Theory)				
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Introduction

The course is organized to provide an adequate knowledge about different algal and bryophytes groups with their representatives along with their Taxonomy, Morphology, Anatomy, Reproduction and Economic Importance. It is generally aimed to familiarize students with the morphological and systematic knowledge of different algae and bryophytes, and their ecological importance.

Learning Outcomes

- After completion of the course, the students will:
- Understand the concept of algae and bryophytes and their significance
 - The micro and macro algal specimens
 - Describe the difference between algae and land plants
 - Understand morphology, reproduction and systematic position of algae and plants

Course Contents

- Phycology**
- Introduction.
 - Historical account, Evolution, Zonation, tides, habitats, geographical distribution of economically important algae:
 - Criteria for algae classification based on Biochemistry, pigment pattern, plastids, flagellation, movement pattern, cell wall structure, storage products, reproduction and life cycle pattern
 - Introduction, general account, classification and economic importance of the following phyla of algae
 - Cyanophyta
 - Chlorophyta
 - Charophyta
 - Xanthophyta
 - Bacillariophyta
 - Phaeophyta
 - Rhodophyta
- Bryology**
- Introduction and general account of bryophytes, classification, theories of origin and evolution.
 - Ecological role in absorption and retention of moisture
 - Distribution of bryophytes in Pakistan
 - Brief study of the classes: Hepaticopsida, Anthocerotopsida and Bryopsida.

Programme	BS Botany	Course Code	Bot-202	Credit Hours	1
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Course Title	Phycology & Bryology (Lab)				
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Course Contents

- Collection and preservation of algae from various habitats.
- Identification of algae.
- Preparation of temporary slides.

- Study of various available genera of algae (live and herbarium). For example; *Sargassum*, *Stechospermum*, *Padina*, *Ectocarpus Stychoglosum*, *Dictyota*, *Ulva*, *Culerpa*, *Helimeda* etc and available as seasonal collection.
- Study of various available genera of bryophytes. For example; *Pellia*, *Porella*,
- *Riccia*, *Marchantia*, *Anthoceros* and *Polytrichum*

Textbooks and Reading Material

Recommended Books:

1. Bold, H.C. and Wynn, M.J 1985. *Introduction to Algae Structure and Reproduction*. Prentice Hall Inc. New York.
2. Lee, R.E. 2008. *Phycology*, 4th Edition. Cambridge University Press, Cambridge.
3. Dawson, E.Y. 1996. *Marine Botany: An Introduction*. Holt, Reinhart and Winstan, New York.
4. Chapman, V.J. and Chapman D.J. 1983. *Seaweeds and Their Uses*. McMillan and Company Ltd. London.
5. Vashishta, B.R. 1991. *Botany for Degree Students: Bryophytes*, 8th Edition. S. Chand and Company, Ltd, New Dehli.
6. Schfield, W.B. 1985. *Introduction to Bryophytes*. MacMillan Publishing Company, Landon.
7. Hussain F. and Ilahi, I. 2004. *A Textbook of Botany*. Department of Botany, University of Peshawar, Peshawar.
8. Sharma, O.P. 2016. *Algae*. MCFraw Hill Education, New Dehli, India.

Teaching Learning Strategies

- Lecture Based Examination (Objective and Subjective)
- Assignments
- Class discussion
- Quiz
- Tests

Assignments: Types and Number with Calendar

- Theoretical/ Innovative
- Practical
- Projection
- Paper reading
