

Course Code	Course Name	Credits
26BY907	CRYPTOGAMIC DIVERSITY	04

### Course Objectives

- To understand the diversity of cryptogams such as algae, bryophytes, pteridophytes, fungi, and lichens.
- To study their general structure and modes of reproduction.
- To gain knowledge about their life cycles and basic features.
- To understand their role and importance in the environment.

### Learning Outcomes

Upon successful completion of this course it is intended that a student will be able to:

- Recognize and classify different groups of cryptogams.
- Explain their structure and reproduction.
- Describe their life cycles with examples.
- Understand their ecological importance.

### Unit 1 - Algae (12 Hrs.)

General Characters, Classification (F.E. Fritsch), Thallus Organization, and Economic Importance of Algae, Morphology and life cycle of *Oscillatoria* and *Volvox*.

### Unit 2 – Fungi (12 Hrs.)

Habit, Habitat, Nutrition, Thallus organization and Reproduction, Classification (Ainsworth), and Economic and industrial applications of Fungi; Morphology and life cycle of *Rhizopus* and *Phytophthora*.

### Unit 3 – Symbiotic association (12 Hrs.)

Lichens-General account, reproduction and significance; Mycorrhiza: ectomycorrhiza and endomycorrhiza and their significance

### Unit 4 – Bryophytes (12 Hrs.)

General Characters, and Classification (Rothmaler) of Bryophytes. Structure, Reproduction and Life cycle of the Following (Development not required) *Riccia*, *Anthoceros*, *Funaria*. Economic importance and industrial applications of Bryophytes.

### Unit 5 - Pteridophytes (12 Hrs.)

General characters of Pteridophytes, Classification (Smith), Stelar evolution, Apospory, Apogamy, Heterospory and Seed habit. Economic importance of Pteridophytes.

### Reference Books:

1. Gangulee HC, Kar AK (2011) College Botany Vol II (Algae, Fungi, Brophyta, Pteridophyta), New Central Book Agency, Kolkata.
2. Pandey,B.P. (2002).A Text book of Botany – Algae. S.Chand & Co., (P) Ltd.,New Delhi.
3. Smith, G.M. (1956): Cryptogamic Botany Vol. II. (2nd Edn.,). (Bryophytes &Pteridophytes). McGraw Hill Book Co., N.Y.
4. Sporne, K. R. (1970): The Morphology of pterdophytes. (The structure of Ferns and Allied Plants). Hutchinson University Library, London.
5. Vashishta, P.C., Sinha, A.K., Kumar, A. (2022). Botany For Degree Students Pteridophyta, New Delhi, Delhi: S. Chand Publication. Delhi, India.
6. Vashishta, P.C., Sinha, A.K., Kumar, A. (2010). Pteridophyta. S. Chand. Delhi, India.
7. Webster, J. and Weber, R. (2007). Introduction to Fungi, Cambridge University Press, Cambridge. 3rd edition.