

SEMESTER-I

MJ- BOT- 01 (MICROBIOLOGY, ALGAE & FUNGI)

- **Total Credits: -04**
- **Total teaching Hours: 60**
- **Total Marks: 100**
- **Semester Internal Examination: 25 Marks**
- **End Semester University Examination: 75 Marks**

Course objectives:

1. This course will provide knowledge on various fields of basic Botany.
2. The syllabus is prepared to enable students for competitive exams in frontier areas of plant science.
3. Students will be able to know about habit, habitat, morphology, anatomy and reproduction of various plant groups.

Course Outcome:

1. Students will understand about the classification and diversity of different microbes including Bacteria, Viruses, Algae, Fungi & their economic importance.
2. Students will understand the conceptual skill about identifying microbes & pathogens.

UNIT 1: MICROBIOLOGY

1. **Methods of Microbiology:** Sterilization, Purification & isolation of viruses, Culture and Culture media. (10 Lectures)
2. **Viruses:** General account of TMV and Bacteriophage. (3 Lectures)
3. **Mycoplasma:** General accounts (2 Lectures)
4. **Bacteria:** General characters, structure, reproduction and economic importance (5 Lectures)
5. **Cyanobacteria:** General account, reproduction and life history of *Nostoc* & *Oscillatoria* (5 Lectures)

UNIT 2: ALGAE AND FUNGI

1. **Algae:** General characters, classification (proposed by Fritsch) and economic importance: important features and life history of *Volvox*, *Oedogonium*, *Chara*, *Sargassum* and *Polysiphonia* (20 Lectures)
2. **Fungi:** General characters, classification (proposed by Alexopoulos) and economic importance: important features and life history of *Phytophthora*, *Peziza*, *Puccinia* and *Agricus*. General account of Lichens. (15 Lectures)

Suggested Readings:

1. Dubey, R.C. & Maheswari, D.K. A Text Book of Microbiology, 2005, S.Chand & Company
2. Biswas, S.B. & Biswas, A. An Introduction to Viruses (4th ed.), 1996, Vikas Publishing House
3. Power, C.B. & Dagainawala, H.F. General Microbiology, Vol. I&II, Himalaya Publishing House
4. Kumar, H.D. Introductory Phycology (2nd ed.), 1999, Affiliated East-West Press Pvt. Ltd.
5. Vashishta, B.R., Sinha, A.K. & Singh, V.P. Algae (9th ed.), 2002, S. Chand & Company
6. Dubey, H.C. An Introduction to Fungi (2nd ed.), 1990, Vikas Publishing House 23
7. Sharma, P.D. Fungi & Allied Organisms, 2005, Narosa Publishing House
8. Sharma, O.P. Text book of Fungi, Tata McGraw Hill