

**B.Sc., BOTANY**  
**First Year, I -Semester**  
**Paper-I**  
**Microbial Diversity and Lower Plants**

DSC - 1A (4 hrs./week)

Credits- 4

**Theory Syllabus**

**(60 hours)**

**UNIT – I**

**(15 hours)**

- 1) **Bacteria:** Structure, nutrition, reproduction and economic importance. Brief account of Archaeobacteria, Actinomycetes and Mycoplasma with reference to little leaf of Brinjal and Papaya leaf curl
- 2) **Viruses:** Structure, replication and transmission; plant diseases caused by viruses and their control with reference to Tobacco Mosaic and Rice Tungro.
- 3) An outline of plant diseases of important crop plants caused by bacteria and their control with reference to Angular leaf spot of cotton and Bacterial blight of Rice.

**UNIT-II**

**(15 hours)**

- 1) General characters, structure, reproduction and classification of algae (Fritsch)
- 2) **Cyanobacteria:** General characters, cell structure their significance as biofertilizers with special reference to Oscillatoria, Nostoc and Anabaena.
- 3) Structure and reproduction of the following:  
Chlorophyceae- Volvox, Oedogonium and Chara.  
Phaeophyceae- Ectocarpus  
Rhodophyceae- Polysiphonia.

**UNIT-III**

**(15 hours )**

- 1) General characters and classification of fungi (Ainsworth).
- 2) Structure and reproduction of the following:
  - (a) Mastigimycotina- Albugo
  - (b) Zygomycotina- Mucor
  - (c) Ascomycotina- Saccharomyces and Penicillium.
  - (d) Basidiomycotina- Puccinia
  - (e) Deuteromycotina- Cercospora.
- 3) Economic importance of lichens

**UNIT-IV**

**(15 hours )**

- 1) **Bryophytes:** Structure, reproduction, life cycle and systematic position of Marchantia, Anthoceros and Polytrichum, Evolution of Sporophyte in Bryophytes.
- 2) **Pteridophytes:** Structure, reproduction, life cycle and systematic position of Rhynia, Lycopodium, Equisetum and Marsilea.
- 3) Stelar evolution, heterospory and seed habit in Pteridophytes.

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