# COURSE: PLANT DIVERSITY- I
# Course Code: BOT(N)-101

**Syllabus**

- General account, distribution, reproduction and classification of viruses, fungi, bacteria, major microbes of food, water and soil.
- Isolation and cultivation of microorganisms, Instruments used in microbiological studies.
- Structure, classification, nutrition, reproduction and economic importance of bacteria.
- General account, classification, structure, reproduction and economic importance of viruses
- Characters, Economic importance, classification and general account of major classes of fungi.
- General account, habit, structure and methods of reproduction in Mastigomycotina, Zygomycotina, Ascomycotina: Mastigomycotina- *Phytophthora*, Zygomycotina- *Mucor*, Ascomycotina-*Saccharomyces, Erysiphe.*
- General account, habit, structure and methods of reproduction in Basiodiomycotina, Deuteromycotina and Mycoplasma: Basiodiomycotina- *Puccinia* and *Agaricus*, Deuteromycotina – *Alternaria*, Mycoplasma- General Account.
- Occurrence, general structure, nutrition, reproduction, economic and ecological importance of lichens.
- General characters and life cycles in algae.
- Important classifications of algae (any three).
- Range of vegetative structure.
- Ecological and economic importance of algae.
- Occurrence, structure of thallus and mode of reproduction in Cyanophyta and Bacillariophyta: Cyanophyta- *Oscillatoria, Nostoc*, Bacillariophyta- General Account.
- Occurrence, Structure of thallus and Mode of reproduction in Chlorophyta and Xanthophyta.
- Chlorophyta– *Chlamydomonas, Volvox, Oedogonium,* and Xanthopyta- *Vaucheria*, Occurrence, Structure of thallus and mode of reproduction in Phaeophyta: *Ectocarpus, Sargassum.*
- Occurrence, Structure of thallus and mode of reproduction in Rhodophyta: *Polysiphonia, Batracospermum.*

**Unit Schedule**

**BLOCK-1: INTRODUCTORY MICROBIOLOGY**

Unit-01 : General account, distribution and classification of microorganisms, major microbes of food, water and soil.

Unit-02 : Isolation and cultivation of microorganisms, instruments used in microbiological studies.

Unit-03 : Structure, classification, nutrition, reproduction and economic importance of bacteria.

Unit-04 : General account, classification, structure, reproduction and economic importance of viruses.

**BLOCK-2: FUNGI AND LICHENS**

Unit-05 : Characters, economic importance, classification and general account of major classes of fungi.

Unit-06 : General account, habit, structure and methods of reproduction in Mastigomycotina, Zygomycotina, Ascomycotina.

Unit-07 : General account, habit, structure and methods of reproduction in Basiodiomycotina, Deuteromycotina and Mycoplasma.

Unit-08 : Occurrence, general structure, nutrition, reproduction, economic and ecological importance of lichens.

**BLOCK-3: ALGAE- GENERAL ACCOUNT**

Unit-09 : General characters. Classifications and life cycles of algae.

Unit-10 : Range of vegetative structure; Ecological and Economic importance of algae.

**BLOCK-4: ALGAE-MAJOR GROUPS**

Unit-11 : Occurrence, Structure of thallus and Mode of reproduction in Cyanophyta and Bacillariophyta.

Unit-12 : Occurrence, structure of thallus and mode of reproduction in Chlorophyta and Xanthophyta.

Unit-13 : Occurrence, structure of thallus and mode of reproduction in Phaeophyta and Rhodophyta.

# COURSE: PLANT DIVERSITY- I (LABORATORY)
# Course Code: BOT(N)-101L

**Syllabus**

- **Microbiology, fungi and lichens**: A study of the following types of Fungi: *Albugo, Phytophthora, Puccinia, Agaricus, Alternaria, Erysiphe, Saccharomyces, Mucor.* Study of morphology and structure of different types of lichens. Different methods of cultivation and isolation of microbes.
- **Diversity of Algae:** Study of algae- *Oscillatoria, Nostoc, Chlamydomonas, Volvox, Oedogonium, Vaucheria, Ectocarpus, Sargassum, Polysiphonia and Batracospermum* by preparing temporary slides.

**Exercise Schedule**

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| Exercise-01 | : | To study the thallus of fungi. |
| Exercise-02 | : | To study of morphology and structure of different types of lichens. |
| Exercise-03 | : | To study different methods of cultivation and isolation of microbes. |
| Exercise-04 | : | To study of the algae types: *Oscillatoria*, *Nostoc* and *Chlamydomonas* by preparing temporary slides. |
| Exercise-05 | : | To study of the algae types- *Volvox, Oedogonium* and *Vaucheria*. |
| Exercise-06 | : | To study of the algae types- *Ectocarpus, Sargassum, Polysiphonia, Batracospermum* by preparing temporary slides. |