

MN- BOT- 01 (DIVERSITY OF NON- FLOWERING PLANTS)

- **Total Credits: -03**
- **Total teaching Hours: 45**
- **Total Marks: 75**
- **Semester Internal Examination:15 Marks**
- **End Semester University Examination: 60 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 sciences.
3. Students will be able to know about habit, habitat, morphology, anatomy and reproduction of various plant groups.

Course Outcome:

1. Students will get understand about the classification and diversity of different microbes including Bacteria, Viruses, Algae, Fungi & their economic importance.
2. Students will get understand conceptual skill about identifying microbes & pathogens.
3. Student will Gain knowledge about developing critical understanding on morphology, general characters, life cycles and economic importance of Bryophytes, Pteridophytes and Gymnosperms.

Unit 1: Viruses: General account of TMV and Bacteriophage. (5 Lectures)

Unit 2: Bacteria: General characters and economic importance. (5 Lectures)

Unit 3: Algae: General characters, economic importance and life history of *Nostoc*, *Oedogonium*, and *Polysiphonia*. (7 Lectures)

Unit 4: Fungi: General characters, economic importance and life history of *Phytophthora*, *Peziza* & *Puccinia*. (7 Lectures)

Unit 5: Bryophytes: General account, economic importance and life history of *Marchantia*, & *Polytrichum*. (7 Lectures)

Unit 6: Pteridophytes: General account and life history of *Selaginella*, *Equisetum* & *Marsilia*. (7 Lectures)

Unit 7: Gymnosperm: General account and life history of *Cycas* and *Pinus*. (7 Lectures)

Suggested Readings:

1. Roy, S.C. and De, K.K. Cell Biology, 1997, New Central Book Agency.
2. Ganguli, H.C. Das, K.S.K. & Dutta, C.T. College Botany, Vol. I, latest Ed., New Central Book Agency
3. Ganguli, H.C. and Kar, A.K. College Botany, Vol. II, latest Ed., New Central Book Agency
4. Sen, S. 1992. Economic Botany, New Central Book Agency, Kolkata.
5. Verma, V. 1974. A Textbook of Economic Botany, Emcay Publication, New Delhi.
6. Bendre, A., Kumar, A. Economic Botany, Rastogi Publication, New Delhi. India
7. Pandey, B.P. Plant Anatomy, Latest Ed., S. Chand & Company.

PRACTICAL (BASED ON MN-BOT-01)

- **Total Credits: -01**
- **Total teaching Hours: 30**
- **Total Marks: 25 (25 Marks End Semester Practical Examination)**

Unit 1: Microbiology: Staining and identification of bacteria.

Unit 2: Algae: Preparation of temporary slides/permanent slides, enumeration of salient features and identification of *Nostoc*, *Oedogonium* and *Polysiphonia*.

Unit 3: Fungi: Preparation of temporary slides/permanent slides, enumeration of salient features and identification of *Phytophthora*, *Peziza* and *Puccinia*.

Unit 4: Bryophytes: Preparation of temporary slides/permanent slides, enumeration of salient features and identification of *Marchantia*, & *Polytrichum*.

Unit 5: Gymnosperm: Preparation of temporary slides/permanent slides, enumeration of salient features and identification of *Cycas* & *Pinus*.

Distribution of marks (Practical):

Experiments	:	10 marks
Spotting	:	05 marks
Class records/Charts/Model/Herbarium etc.	:	05 marks
Viva voce	:	05 marks