



*Shri Shivaji Education Society Amravati's*  
**Shri Shivaji Arts, Commerce & Science College,  
Motala, Dist – Buldhana.**

NAAC Re-Accredited with C Grade with CGPA 1.86  
Affiliated to S.G.B. Amravati University.



**Department of Botany**

## Programme Outcome

- PO 1. Critical Thinking:** Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.
- PO 2. Effective Communication:** Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
- PO 3. Social Interaction:** Elicit views of others, mediate disagreements and help reach conclusions in group settings.
- PO 4. Effective Citizenship:** Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.
- PO 5. Ethics:** Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.
- PO 6. Environment and Sustainability:** Understand the issues of environmental contexts and sustainable development.
- PO 7. Self-directed and Life-long Learning:** Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes.

# Programme Specific Outcome

1. Identify major groups of plants and compare the characteristics of lower (microbes, algae, fungi, bryophytes and pteridophytes) and higher (Gymnosperms and angiosperms).
2. use evidence based comparative botany approach to explain the evolution of organism and understand the genetic diversity.
3. Explain various plant processes and functions, metabolism, concepts of gene, genome and how organism's function is influenced at the cell, tissue and organ level.
4. Understand adaptation, development and behavior of different forms of life.
5. Demonstrate the experimental techniques and methods of their area of specialization in Botany.

# Course Outcome

## **B.Sc.-I Semester-I (Theory)**

After completion of this course successfully, the students would be able to

1. **Understand** microbial diversity, reproduction and economic importance.
2. **Differentiate** the microbes, algae and fungi on the basis of morphology, cellular organization, nutrition and metabolic activities.
3. **Classify** and **identify** the various algal genera.
4. **Classify** and **identify** the various fungal genera.
5. **Systematize** the plant diseases and their pathogens
6. **Apply** understanding of microbial diversity, phycology and mycology for teaching primary to high school students

## **B.Sc.-I Semester-I (Practical)**

After completion of this course successfully, the students would be able to

1. Identify and classify the algae on the basis of morphology and other characters.
2. Create monograph of Algae and Fungi.
3. Demonstrate the structural details of viruses and bacteria included in practical work.
4. Evaluate the plant diseases of local plants and diagnosed the diseases on the basis of symptomatology.

## **B.Sc.-I Semester-II (Theory)**

After completion of this course successfully, the students would be able to

1. Demonstrate on **understanding** of Archegoniate, Bryophytes, Pteridophytes and Gymnosperms.
2. **Identify** and **classify** plants from Bryophytes, Pteridophytes and Gymnosperms.
3. Develop **critical thinking** on morphology, anatomy and reproduction of Bryophytes, Pteridophytes and Gymnosperms.
4. Acquire **skill** of collection and preservation of Bryophytes, Pteridophytes and Gymnosperms

## **B.Sc.-I Semester-II (Practical)**

By the end of the Lab/Practical Course, generally students would be able to:

- 1) Understand forms of Bryophytes, Pteridophytes and Gymnosperms.

- 2) Acquire the skill of preparation of slides of plant body and reproductive organs.
- 3) Classify and identify different plant parts on the basis of external morphology.
- 4) Describe the plants in technical language.
- 5) develop critical understanding on morphology, botanical names and cultivation practices of economically important plants.

### **B.Sc.-II Semester-III (Theory)**

After completion of this course successfully, the students would be able to

1. Understand the basic principles involved in identification, naming and classification of flowering plants.
2. Know the systematic study and economic importance of plants belonging to the various families.
3. Differentiate various tissue systems.
4. Understand the normal and anomalous secondary growth in plants and their causes.
5. Understand developmental stages in plant embryo and seed formation.
6. Apply understanding this knowledge to explain the taxonomic diversity of plants and imply the embryological and anatomical knowledge to differentiate the plant taxa.

### **B.Sc.-II Semester-IV (Theory)**

After completion of this course successfully, the students would be able to

1. Understand the structure and purpose of basic components of prokaryotic and eukaryotic cells.
2. Identify the concept that explains chemical composition and structure of cell wall and membrane
3. Differentiate cell organelles on the basis of structure and function.
4. Comprehend the effect of chromosomal abnormalities in numerical as well as structural changes.
5. Have conceptual understanding of laws of inheritance, genetic basis of loci, alleles, their linkage and crossing over.
6. Understand the basic concepts of plant breeding.
7. Analyse the different selection and breeding methods applied in crop improvement.

### **B.Sc.-III Semester-V (Theory)**

1. Students will be able to understand various aspects of plant physiology like plant water relation, photosynthesis, respiration, and metabolism.

2. Students will understand the aspects of plant ecology like various factors and ecosystem composition and function.
3. Students will be able to design various experiments/ models on plant physiology and plant ecology.
4. Students will be able to understand various aspects of plant physiology like plant water relation, photosynthesis, respiration, and metabolism.
5. Students will understand the aspects of plant ecology like various factors and ecosystem composition and function.
6. Students will be able to design various experiments/ models on plant physiology and plant ecology.

### **B.Sc.-III Semester-VI (Theory)**

1. Study of DNA as genetic material.
2. Study of gene structure and how it has been expressed in the cell system.
3. Understand how to regulate gene expression in the cell system.
4. Understand that by using various technical tools how to manipulate genes, or genetic engineering.
5. Information about plant tissue culture.
6. Gives ideas about how biotechnology is applicable in agriculture, industry and health care.