

2. **Research aptitude:** Enhanced observations kindle research aptitude which ultimately lead to additions to the existing knowledge base
3. **Effective Scientific Communication:** Read, write, listen and disseminate plant science with research knowledge, in person and through scientific platforms and journals.
4. **Problem Solving:** Understand and solve the problems with reference to Nature and society to meet the specified needs using the knowledge, skills and attitudes acquired.
5. **Effective Citizenship:** Demonstrate empathetic environmental and social concern for equity centered global development, and develop the ability to act with an informed awareness of issues and participate incivic life through volunteering.
5. **Environment and Sustainability:** Understand the issues of environmental contexts and sustainable development at global level.
6. **Independent and Life-long Learning:** Acquire the ability to engage in independent learning through research and lifelong learning in the broadest context of socio-technological changes

#### **PROGRAMME SPECIFIC OUTCOMES (PSOs)**

- After completing the PG course in Botany, the students will be able to acquire competency in the area of plant biology.
- Will be competent in differentiating the diverse groups of plants and microbes
- Will be well versatile in understanding the importance of nature and natural ecosystems along with sustainable utilization of natural resources for the betterment of humankind.
- Will have a sound understanding in the cultivation process of crop plants, its diseases and managing the diseases.
- Will be trained in acquiring the problem solving skills in environmental monitoring and pollution control measures
- Understand the importance of biodiversity conservation
- Gain knowledge in understanding the importance of research, its methodology, use of library & digital resources
- The use of sophisticated equipments and to demonstrate analytical ability to tackle the scientific research problems and also to maintain a high level of botanical research.
- Acquire the ability to understand life processes at cellular as well as molecular level
- Acquire core competency in distinguishing the internal structure of various groups of plants and knows the concept, process, physiology of plant development.

#### **DETAILED SYLLABUS**

**BOT1 C01. PHYCOLOGY, BRYOLOGY, PTERIDOLOGY AND GYMNOSPERMS** (1.5+1+2+1.5 = 6 hours per week)

##### **Phycology**

1. Classification of Algae-comparative Survey of important systems-Fritsch-Smith-Round.Criteria for algal classification-Phylogenetic considerations.
2. Biological importance ofPlanktons.
3. Algal cytology-Basic ideas of cell features-Electron microscopic studies of algal cell, cell wall,flagella, chloroplast, pyrenoid, eyespot- their importance in classification.
4. Reproduction-Different types of life cycles in algae.
5. General account of energy sources and pigments inalgae.
6. Economicimportanceofalgae-Rollofalgaeinsoilfertility,algaeinindustry-Biologica limportance of phyto planktons and waterblooms.
7. General account of thallus structure, cell ultra-structure, reproduction, relationships andevolutionary trends in the following'groups: Chlorophyta, Xanthophyta, Bacillariophyta, Phaeophyta,Rhodophyta.