

# Postgraduate Department of Botany

## M.Sc. Botany

### Programme Outcomes

<b>PO1</b>	To built a clear, comprehensive and advanced mastery in the field of Botany.
<b>PO2</b>	To provide basic principles of biological sciences with special reference to Botany and its applied branches.
<b>PO3</b>	Enabling the students to explore the intricacies of life forms at cellular, molecular and Nano level.
<b>PO4</b>	PO4. To sustain students' motivation and enthusiasm and to help them not only to appreciate the beauty of different life forms but also to inspire them in the dissemination of the concept of biodiversity conservation.
<b>PO5</b>	To develop problem solving skills in students and encourage them to carry out innovative research projects thereby enkindling in them the spirit of knowledge creation.
<b>PO6</b>	To maintain a high level of scientific excellence in botanical research with added emphasis on the role of plants in the structure and functioning of terrestrial and aquatic communities and ecosystem
<b>PO7</b>	To equip students to perform functions that demand higher competence in National/International fields.

### Course Outcomes

#### **BY010101: MICROBIOLOGY AND PHYCOLOGY**

##### Course Outcomes

- Understand the structure and types of bacteria and viruses.
- Familiarize different methods of isolation of microbes
- To create a holistic awareness about microbes

## **BY010102: MYCOLOGY AND CROP PATHOLOGY**

### **Course Outcomes**

- To familiarize the student with the structure and reproduction in fungi.
- To learn the economic importance of fungi
- To study the interactions between the diseases causing agents and host plant.

## **BY010103: BRYOLOGY AND PTERIDOLOGY**

### **Course Outcomes**

- Understand the general and unique features of bryophytes and Pteridophytes and familiarize it.
- To study the morphology, anatomy and reproduction of different groups of Bryophytes and Pteridophytes.
- Realize the application of Bryophytes and Pteridophytes in different fields.

## **BY010104: GYMNOSPERMS, PALEOBOTANY AND EVOLUTION**

### **Course outcomes**

- Understand the structure of both living and fossil gymnosperms
- To equip the students to identify gymnosperms in India
- Familiarize students about fossilization and techniques in paleontology.

## **BY010201: PLANT ANATOMY, DEVELOPMENTAL BIOLOGY AND HORTICULTURE**

### **Course outcomes**

- Create an insight about anatomy of plant
- Make students aware about basic concepts of developmental biology.
- Develop skill in gardening technique among students

## **BY010202: CELL BIOLOGY, GENETICS AND PLANT BREEDING**

### **Course outcomes**

- Equip students to identify different stages of mitosis and meiosis
- Create an awareness about cancer
- To familiarize the students with the methods of crop improvement.
- To study the importance of different breeding techniques in the welfare of nations.

## **BY010203: PLANT PHYSIOLOGY AND BIOCHEMISTRY**

### **Course Outcomes**

- To understand important physiological activities in plants
- To familiarize activities of plant growth regulators
- To demonstrate experiments that clearly explains the physiological activities in plants
- To enable the students to learn the biomolecules and its functions in biological processes.

## **BY010204: MOLECULAR BIOLOGY**

### **Course Outcomes**

- To understand the mechanisms of DNA replication, RNA synthesizing and processing, protein synthesis.
- To create an insight about protein sorting and translocation.
- To create awareness about gene expression control in prokaryotes and eukaryotes.

## **BY010301: RESEARCH METHODOLOGY, MICROTECHNIQUE, BIOSTATISTICS AND BIOPHYSICAL INSTRUMENTATION**

### **Course Outcomes**

- To equip students to prepare project proposals and dissertations.
- To make students aware about journals and its impact factor.

- To equip the students to conduct independent research and prepare research reports.
- To understand about different techniques in microtechnique.
- Create an insight about electrophoresis and spectroscopy.

## **BY010302: BIOTECHNOLOGY, BOINFORMATICS AND BIONANOTECHNOLOGY**

### **Course Outcomes**

- Understand and familiarize the technological advancement in the field of biotechnology, bioinformatics and bio nanotechnology.
- Equip the students to access the consortium of biological databases.
- Familiarize various software tools for data analysis and construction of phylogenetic tree.

## **BY010303: ANGIOSPERM TAXONOMY, ECONOMIC BOTANY AND ETHNOBOTANY**

### **Course Outcomes**

- Identify the common plant species in Kerala
- Familiarize the standard field and herbarium techniques
- Understand the economic importance of plants
- Familiarize the medicinal and economically useful plants

## **BY010304: ENVIRONMENTAL SCIENCE**

### **Course Outcomes**

- To make students aware about the environmental problems, their consequences and solutions
- Acquaint students about the significance of environmental science
- To understand structure and function of ecosystem.
- Create an insight about the extent of biodiversity and the importance of their conservation.

## **PROGRAMME ELECTIVE – BIOTECHNOLOGY**

### **BY0800401: PLANT TISSUE CULTURE AND MICROBIAL BIOTECHNOLOGY**

#### **Course Outcomes**

- Equip the students to carry out plant tissue cultures.
- To understand about bioremediation and its significance.
- Create an insight about stem cell technology.

### **BY800402: GENETIC ENGINEERING, GENOME EDITING AND IMMUNOLOGY**

#### **Course Outcomes**

- To understand the application of genome editing in gene manipulation and gene therapy.
- Familiarize the application of protein engineering in different fields.
- To realize the achievements in genetic engineering in different fields.

### **BY800403: GENOMICS, TRANSCRIPTOMICS, PROTEOMICS AND BIOINFORMATICS**

#### **Course Outcomes**

- To create an insight into the modern techniques in genome analysis
- To understand different methods in functional genomics.
- To understand the bioinformatics tools for sequence alignment
- Equip to access and analyze the data available in the data bases.