

## Programme Outcome (P.O) of M.Sc Botany

- The Master of Science in Botany programme is designed to provide students with both fundamental and in-depth understanding of plant sciences.
- The curriculum for botany is created to give students a comprehensive understanding of the subject matter as well as technical skills related to plants.
- Students are exposed to modern technologies that are currently employed in the field.
- They are educated on social and environmental issues, the value of plants, and their bearing on the state of the economy.

## Programme specific outcome (PSO) M.Sc Botany

<b>COURSE AND COURSE CODE</b>	<b>COURSE OUTCOME As per syllabus (BOS)</b>	<b>SEMESTER / TAXONOMIC LEVEL</b>
<b>PAPER BO211. PHYCOLOGY, MYCOLOGY, MICROBIOLOGY &amp; PLANT PATHOLOGY</b>	<ul style="list-style-type: none"><li>• Students will be able to Comprehend the diversity of lower cryptogams (Algae, Fungi, Bacteria, and Viruses).</li><li>• Collection and study of algae and fungi from different localities of Kerala and identification up to generic level.</li><li>• Students will learn different diagnostic techniques applied in pathology and will also be able to diagnose plant disease for proper recommendation of control measures.</li></ul>	<b>SEMESTER-I</b>
<b>PAPER BO 212. BRYOPHYTA, PTERIDOPHYTA AND GYMNOSPERMS</b>	<ul style="list-style-type: none"><li>• After successful completion of this course, students will be able to:</li><li>• Distinguish the morphological, anatomical features of bryophytes, pteridophytes and gymnosperms.</li><li>• Economic values of the lower plants.</li></ul>	<b>SEMESTER-I</b>
<b>PAPER. BO 213.</b>	After successful completion of this course, students will be able to:	<b>SEMESTER-I</b>

<b>HISTOLOGY, REPRODUCTIVE BIOLOGY, MICROTECHNIQUE AND HISTOCHEMISTRY</b>	<ul style="list-style-type: none"> <li>• To understand the anatomical features of plant parts and to identify the anomalous growth</li> <li>• To correlate the anatomical features to taxonomy</li> <li>• To acquire knowledge on plant reproduction and development</li> <li>• To familiarise the techniques for the preservation and processing of tissues</li> <li>• To get practical experience in microtechnique and histochemistry</li> </ul>	
<b>PAPER B221 TAXONOMY OF ANGIOSPERMS, ECONOMIC BOTANY AND ETHNOBOTANY</b>	<ul style="list-style-type: none"> <li>• To understand the concepts and principles related to Plant taxonomy, Ethnobotany and Economic botany</li> <li>• To acquire the skill in plant identification and herbaria preparation</li> <li>• To create an attitude in conserving plants for sustainable development <ul style="list-style-type: none"> <li>• Preparation of botanical keys at generic level by locating key characters.</li> </ul> </li> </ul>	<b>SEMESTER- II</b>
<b>PAPER BO222 ENVIRONMENTAL BIOLOGY, FOREST BOTANY, PHYTOGEOGRAPHY AND CONSERVATION BIOLOGY</b>	<ul style="list-style-type: none"> <li>• On completion of this course the students are able to analyse various types of ecosystems, correlate different ecosystems.</li> <li>• The students will be able to analyse the environmental impacts of anthropogenic activities</li> <li>• The students will be able to monitor various physical, chemical and biological properties of soil water and air.</li> <li>• Appreciate the need of biodiversity conservation in the context of various developmental pathways and policy framework that the mankind has been undergoing</li> </ul>	<b>SEMESTER- II</b>
<b>PAPER BO223: CELL BIOLOGY, GENETICS AND EVOLUTION</b>	<p>After successful completion of this course, students will be able to:</p> <ul style="list-style-type: none"> <li>• Analyse the concepts on cell organelles, cell cycle, cell differentiation and interactions</li> <li>• Acquaint with concepts in prokaryotic,</li> </ul>	<b>SEMESTER- II</b>

	<p>eukaryotic, and viral genetics</p> <ul style="list-style-type: none"> <li>• Explain central dogma of molecular biology (replication, transcription, and translation)</li> <li>• Students will be able to Isolate plant DNA and quantify it</li> </ul>	
<p><b>PAPER. BO 231.</b> <b>PLANT BREEDING,</b> <b>HORTICULTURE</b> <b>AND</b> <b>BIOSTATISTICS</b></p>	<ul style="list-style-type: none"> <li>• To introduce the student with branch of plant breeding for the survival of human being from starvation.</li> <li>• To study the techniques of production of new superior crop varieties.</li> <li>• Understand the modern strategies applied in Genetics and Plant Breeding to sequence and analyze genomes</li> <li>• Get the detail knowledge about modern strategies applied in Plant Breeding for crop improvement</li> </ul>	<p><b>SEMESTER-III</b></p>
<p><b>PAPER. BO 232.</b> <b>BIOCHEMISTRY,</b> <b>PLANT PHYSIOLOGY</b> <b>AND</b> <b>RESEARCH</b> <b>METHODOLOGY</b></p>	<ul style="list-style-type: none"> <li>•After completion of the course the students are familiar with various physiological aspects involved in the plant development</li> <li>•To trace the relationship between biochemical pathways in plants and the physiological processes. <ul style="list-style-type: none"> <li>• The students are able to isolate starch, pectine and various nutritive products from the plants.</li> <li>• Students will have an in-depth knowledge of plant signalling mechanisms and the pathways associated with it, secondary metabolites and the major pathways of their biosynthesis, and the mechanisms controlling the regulation of genome expression.</li> </ul> </li> <li>•To introduce the basic concepts in research methodology</li> <li>•To prepare the students to draft a project proposal</li> </ul>	<p><b>SEMESTER-III</b></p>
<p><b>PAPER BO 233.</b> <b>MOLECULAR</b> <b>BIOLOGY,</b></p>	<p>The student will be able to :</p> <ul style="list-style-type: none"> <li>• Get the knowledge on various techniques in molecular biology</li> <li>• Get the skill in isolation and quantification of DNA and proteins</li> <li>• Understand the knowledge on immunology,types of immune response and</li> </ul>	<p><b>SEMESTER-III</b></p>

<b>IMMUNOLOGY AND PLANT BIOTECHNOLOGY</b>	immunotechniques <ul style="list-style-type: none"> <li>● Produce tissue cultured plants and artificial seeds</li> </ul>	
<b>SPECIAL PAPER – I BO 241: BIOINFORMATICS AND BIOPHYSICS</b>	The student will be able to <ul style="list-style-type: none"> <li>●Familiarise protein and nucleic acid data bases and genomics &amp; proteomics.</li> <li>●Acquire the skill in phylogenetic tree construction</li> <li>●Understand basics of computer aided drug designing</li> <li>●Pursue research in Botany and advanced learning in Botany by knowing the principles of Bioinformatics.</li> <li>● To explain key concepts in Biophysics</li> <li>● To familiarise the modern instruments and techniques in Biology, their principles and applications</li> <li>● To develop skill in handling various instruments related to Biophysics</li> </ul>	<b>SEMESTER-IV</b>
<b>PAPER BO 242a: SPECIAL PAPER –II ELECTIVE BIOTECHNOLOGY</b>	The student will be able to <ul style="list-style-type: none"> <li>● Understand the concept of biotechnology and microbial genetics</li> <li>● Get the knowledge on plant tissue culture and gene transfer technology</li> <li>● Acquire the skill in producing tissue cultured plants and artificial seeds</li> <li>●Get an understanding on the application of biotechnology in the production of secondary metabolites</li> </ul>	<b>SEMESTER-IV</b>