

Postgraduate Department of Botany

B.Sc. Botany

Programme Outcomes

PO1	To know and understand the range of plant diversity in terms of structure, function and environmental relationships. 2. The evaluation of plant diversity. 3. Plant classification. 4. The role of plants in the functioning of the global ecosystem.
PO2	Students learn to carry out practical work, in the field and in the laboratory, in the following areas plant morphology and anatomy, plant taxonomy, plant ecology, plant physiology.
PO3	To demonstrate procedural knowledge that creates different types of professionals in the field of Botany i.e. research, teaching, horticulture. Further application of knowledge can enhance productivity of several economically important product/botanicals
PO4	Develop skills and ability to use knowledge efficiently in areas related to specializations and current updates in the subject
PO5	Apply the knowledge and understanding of Botany to new/unfamiliar situations and to identify problems and solutions in daily life.

Course Outcomes

Core Course 1: METHODOLOGY OF SCIENCE AND AN INTRODUCTION TO BOTANY

Course outcomes

- Understand the universal nature of science
- To follow the scientific method to solve problems
- To lay a strong foundation to the study in Botany
- Develop basic skills to study Botany in detail.

Core Course 2: MICROBIOLOGY, MYCOLOGY AND PLANT PATHOLOGY

Course outcomes

- Understand the world of microbes, fungi and lichens
- Appreciate the adaptive strategies of the microbes, fungi and lichens
- To study the economic and pathological importance of microorganisms

Core Course 3: PHYCOLOGY AND BRYOLOGY

Course outcomes

- To study the evolutionary importance of Algae as progenitors of land plants
- Understand the unique and general features Algae and Bryophytes and familiarize it
- To study the external morphology, internal structure and reproduction of different types of Algae and Bryophytes
- Realize the application of Phycology in different fields

Core Course 4: PTERIDOLOGY, GYMNOSPERMS AND PALEOBOTANY

Course outcomes

- Understand the diversity in habits, habitats and organization of various groups of plants.
- Understand the evolutionary trends in Pteridophytes and Gymnosperms.
- Study the anatomical variations in vascular plants.
- Understand the significance of Paleobotany and its applications.

Core Course 5: ANATOMY, REPRODUCTIVE BOTANY AND MICROTECHNIQUE

Course outcomes

- Imparting an insight into the internal structure and reproduction of the most evolved group of plants, the Angiosperm.
- Understand the individual cells and also tissues simultaneously
- Understand the structural adaptations in plants growing in different environment.
- Understand the techniques used to preserve and study plant materials.

Core Course 6: RESEARCH METHODOLOGY, BIOPHYSICS AND BIOSTATISTICS

Course outcomes

- To equip the students to conduct independent research and prepare research reports.
- To make the students acquaint with different tools and techniques used in research work.
- To equip the students with basic computer skills necessary for conducting research.
- To enable the students to have enough numerical skills necessary to carry out research.

Core Course 7: PLANT PHYSIOLOGY AND BIOCHEMISTRY

Course outcomes

- Acquire basic knowledge needed for proper understanding of plant functioning.
- Familiarize with the basic skills and techniques related to plant physiology.
- Understand the role, structure and importance of the bio molecules associated with plant life.

Core Course 8: ENVIRONMENTAL SCIENCE AND HUMAN RIGHTS

Course outcomes

- Acquaint the student with the significance of Environmental Science.
- Make the students aware about the extent of the total biodiversity and the importance of their conservation.
- Enable the students to understand the structure and function of the ecosystems.
- Enable the students to understand various kinds of pollution in the environment, their impacts on the ecosystem and their control measures
- Make the students aware about various environmental laws in India and the role of various movements in the protection of nature and natural resources.

Open course - AGRI-BASED MICROENTERPRISES

Course outcomes

- Provide basic information about the business opportunities in plant sciences.
- Inform the student about sustainable agriculture and organic farming.
- Inculcate an enthusiasm and awareness about ornamental gardening, nursery management and mushroom cultivation.

Core Course 9: GENETICS, PLANT BREEDING AND HORTICULTURE

Course outcomes

- Imparting an insight into the principles of heredity
- Understand the patterns of inheritance in different organisms
- Understand the inheritance pattern of nuclear and extra nuclear genes
- Understand the methods of crop improvement
- Understand the importance of horticulture in human welfare
- Develop skill in gardening technique among students

Core Course 10: CELL AND MOLECULAR BIOLOGY

Course outcomes

- Understand the ultra-structure and functioning of cell in the sub-microscopic and molecular level.
- Get an idea of origin, concept of continuity and complexity of life activities.
- Familiarization of life processes.
- Understand the basic and scientific aspect of diversity.
- Understand the cytological aspects of growth and development.
- Understand DNA as the basis of heredity and variation.

Core Course 11: ANGIOSPERM MORPHOLOGY, TAXONOMY AND ECONOMIC BOTANY

Course outcomes

- Acquaint with the aims, objectives and significance of taxonomy.

- Identify the common species of plants growing in Kerala and their systematic position.
- Acquaint with the basic technique in the preparation of herbarium.
- Familiarizing with the plants having immense economic importance.

Core Course 12: BIOTECHNOLOGY AND BIOINFORMATICS

Course outcomes

- Understand the current developments in the field of Biotechnology and Bioinformatics.
- Introduce the vast repositories of biological data knowledge.
- Equip to access and analyse the data available in the databases.

Elective course: AGRIBUSINESS

Course outcomes

- Inculcate and impart an idea about the business opportunities in the field of plant sciences.
- Develop an entrepreneurial mind-set and also to stick on to the core subject among the Botany students.
- Give an idea about the need of sustainable development and organic farming.
- Harness the opportunities and potentials in the field of ecotourism, processing technology and food sciences.

Vocational course 1 - FUNDAMENTALS OF HORTICULTURE

Course Outcomes

- Understand the importance of horticulture
- To familiarize different irrigation systems
- Provide basic information about garden tools and implements
- Acquire basic knowledge on soil formation.

Vocational Course 2 - PLANT PROPAGATION

Course Outcomes

- To understand the need of plant propagation.
- Appreciate the different plant propagation methods(natural and Artificial)
- To develop practical skills in artificial propagation methods.
- To familiarize preparation of potting mixture.

Vocational Course 3 – ORNAMENTAL HORTICULTURE AND LANDSCAPING

Course Outcomes

- To understand the scope and importance of ornamental horticulture.
- To familiarize cultivation methods of different groups of ornamental plants
- To create an interest in gardening and landscaping
- Create an awareness about the scope of commercial landscaping
- Foster skills in ornamental gardening technique among students

Vocational Course 4 - PLANT PROTECTION AND NURSERY MANAGEMENT

Course Outcomes

- To study the common diseases of horticultural crops.
- To help the students to familiarize with the different plant protective measures.
- To study the agricultural chemicals used in crop protection.
- To know how a plant nursery could be established.
- To understand the different aspects of transplanting.

Vocational Course 5 – FLORICULTURE

Course Outcomes

- To help the student to understand the importance of commercial floriculture.
- To familiarize the cultivation methods involved in flowering plants.
- To study the different aspects of landscape gardening.

Vocational Course 6 – OLERICULTURE

Course Outcomes

- To familiarize cultivation methods of vegetables and mushrooms
- To develop practical skills in cultivation of vegetables
- Equip the students to carry out commercial level of cultivation.
- To create awareness on sustainable agriculture and healthy foods
- Develop interest in sustainable cultivation of mushrooms and vegetables

Vocational Course 7 - POMOLOGY, FOOD TECHNOLOGY AND POST-HARVEST MANAGEMENT OF HORTICULTURAL CROPS

Course Outcomes

- To understand the economic and health benefits of fruit.
- Give an idea about the cultivation of fruit trees and the major insect-pests and diseases of fruits and their integrated control measures.
- Understand the importance of packaging of fruits Know the different methods of food preservation.
- Know about the processed products which can be prepared from fruits.
- Impart an insight into the post-harvest management of fruit crops.

Vocational Course 8 – CULTIVATION OF MEDICINAL AND AROMATIC PLANTS, SPICES AND PLANTATION CROPS

Course Outcomes

- Equip the students to identify different medicinal plants.
- Familiarize the cultivation methods and processing practices of different spices
- Understand the scope and importance of plantation crops.
- Create an insight about the traditional uses of medicinal and aromatic plants in Kerala.

Complementary course - Zoology: ZY1CMT01 - NON CHORDATE DIVERSITY

Course Outcomes

- To study the scientific classification of invertebrate fauna.
- To learn the physiological and anatomical peculiarities of some invertebrate phyla through type study.
- To learn the unity of life with rich diversity of organism and evolutionary significance of certain invertebrate fauna.
- To stimulate the curiosity of students in the biota living around them.

Complementary course - Zoology: ZY2CMT02 -CHORDATE DIVERSITY

Course Outcomes

- To make the student observe the diversity in chordates and their systemic position.
- To make the student aware of the economic importance of some chordates.
- To learn the physiological and anatomical peculiarities of some vertebrate species through type study.
- To stimulate the students' curiosity in vertebrates living associated with them.

Complementary course - Zoology: ZY3CMT03 - PHYSIOLOGY AND IMMUNOLOGY

Course Outcomes

- To appreciate the correction between structure and function of organisms.
- To make the student aware of the health related problems, their origin and treatment.
- To understand how efficiently our immune system work in our body .
- To acquire knowledge about preventing common diseases rather than curing.

Complementary course - Zoology: ZY4CMT04 - APPLIED ZOOLOGY

Course Outcomes

- To acquire basic knowledge and skills in applied branches of zoology.
- To understand the technology for utilising eco-friendly organisms around them for beneficial purpose.
- To equip the students for self employment opportunities with scientific knowledge to perform profitably and confidently.