**KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)**
**Re-accredited by NAAC with 'A+' Grade (4th Cycle)**
**College of Excellence (UGC) Coimbatore – 641 029**

# DEPARTMENT OF BOTANY

## COURSE OUTCOMES (CO)

## M.SC. BOTANY

**For the students admitted**
**in the Academic Year 2021-2022**

**21PBO101**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Paper: 1 -PLANT DIVERSITY - I** | | | | |
| **Batch 2021-2022** | **Semester I** | **Hours / Week 7** | **Total Hours 105** | **Credits 5** |

## COURSE OBJECTIVES

- To obtain knowledge on diverse groups of Thallophytes.
- To impart insight knowledge on the diversity, structural organization and reproduction of algae, fungi and lichens.
- To acquire knowledge on the life cycle patterns of Thallophytes and their significance.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Grasp the basic concepts of lower life forms. |
| K2 | CO2 | Understand the diversity in habits, habitats and organization of various groups of lower plants. |
| K3 | CO3 | Inherit knowledge on the exploitation of useful products from lower forms for the betterment of human welfare. |
| K3 | CO4 | Apply their acquired knowledge to improve the economic quality of the lower life forms. |

**21PBO102**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Paper: 2 -PLANT DIVERSITY - II** | | | | |
| **Batch 2021-2022** | **Semester I** | **Hours / Week 7** | **Total Hours 105** | **Credits 5** |

## COURSE OBJECTIVES

- To impart insight knowledge on the structural organizations and life cycle patterns of Bryophytes, Pteridophytes and Gymnosperms.
- To understand the basic concepts of evolutionary trends in Cryptogams and Phanerogams.
- To learn the preserved vestiges of various plant life forms of geological past.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Gain the knowledge on phylogeny of Bryophytes, Pteridophytes and Gymnosperms. |
| K2 | CO2 | Understand the alternation and generations of Cryptogams and Phanerogams. |
| K3 | CO3 | Apply the knowledge on identification of living fossils from the fossils. |
| K3 | CO4 | Distinguish various kinds of fossilization process. |

**21PBO103**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Paper: 3 –ANATOMY, EMBRYOLOGY OF ANGIOSPERMS AND MICROTECHNIQUES** | | | | |
| **Batch 2021-2022** | **Semester I** | **Hours / Week 6** | **Total Hours 90** | **Credits 4** |

## COURSE OBJECTIVES

- To understand the histochemical techniques involved in permanent micro slides.
- To acquire knowledge about complex vascular tissues.
- To obtain inherit knowledge on mega and macro sporangial development and their functions.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Recognize various histochemical techniques involved in anatomy and embryology. |
| K2 | CO2 | Understand phylogenetic relationship of vascular tissues. |
| K3 | CO3 | Prepare their own microslides taken from the microtome. |
| K3 | CO4 | Adopt the parthenocarpic techniques for economically important crop improvements. |

**21PBO1CL**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Practical: 1 - PLANT DIVERSITY- I & II, ANATOMY, EMBRYOLOGY OF ANGIOSPERMS AND MICROTECHNIQUES** | | | | |
| **Batch 2021-2022** | **Semester I** | **Hours / Week 4** | **Total Hours 60** | **Credits 2** |

## COURSE OBJECTIVES

- To understand the diversity and distribution of lower life forms.
- To obtain insight knowledge on variations in the internal structural organization among plants.
- To impart inherent knowledge on the basic techniques and modern concepts of microtome.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K3 | CO1 | Acquire and analyze interrelationships between various lower life forms |
| K4 | CO2 | Understand the primary and secondary structure of plants. |
| K5 | CO3 | Monitor the sequential changes in the internal structural organization of plants by sectioning through Microtechniques |

**21PBO204**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Paper: 4 – BIOINFORMATICS** | | | | |
| **Batch 2021-2022** | **Semester II** | **Hours / Week 6** | **Total Hours 90** | **Credits 4** |

## COURSE OBJECTIVES

- To have the knowledge of bioinformatics in various fields.
- To understand the structure of biological databases and their utilities.
- To impart knowledge about various tools to manipulate the biological databases.

## COURSE OUTCOME

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Grasp knowledge on various biological databases. |
| K2 | CO2 | Impart knowledge on gene and its expression both in prokaryotes and eukaryotes. |
| K3 | CO3 | Use the specific tools to know the biological relationships existing among the living organisms. |
| K3 | CO4 | Execute appropriate algorithms to identify the similarities and dissimilarities existing between the genes of various organisms. |

**21PBO205**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Paper 5 - CELL BIOLOGY, GENETICS, PLANT BREEDING AND BIOSTATISTICS** | | | | |
| **Batch 2021-2022** | **Semester II** | **Hours / Week 6** | **Total Hours 90** | **Credits 5** |

## COURSE OBJECTIVES

- To learn about concept of genes and gene interactions.
- To study about the principles of Mendelian's and non-Mendelian's inheritances
- To assess the methods of plant breeding and crop improvement
- To learn the experimental designs using biostatistical tools

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Acquire knowledge about different fields of genetics. |
| K2 | CO2 | Identify the sex linked disease among the population. |
| K3 | CO3 | Implement their knowledge on mutation for the betterment of the mankind. |
| K3 | CO4 | Describe various molecular breeding techniques for genetic improvement of the crops. Design experimental methods using the statistical knowledge. |

**21PBO206**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Paper: 6 - ECOLOGY, BIOENERGETICS AND NATURAL RESOURCE MANAGEMENT** | | | | |
| **Batch 2021-2022** | **Semester II** | **Hours / Week 6** | **Total Hours 90** | **Credits 5** |

## COURSE OBJECTIVES

- To understand the structural and functional organization of the ecosystems.
- To know the causes of environmental deterioration and possible measures for their rejuvenation.
- To understand the natural calamities and disaster management.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Acquire and analyze interrelationships between living and non-living things. |
| K2 | CO2 | Understand the cyclic flow of the elements between organisms and the environment. |
| K3 | CO3 | Monitor and document the biodiversity changes and their management approaches through remote sensing techniques. |
| K3 | CO4 | Apply strategies for the conservation of natural resources. |

**21PBO2CM**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Practical 2 - BIOINFORMATICS** | | | | |
| **Batch 2021-2022** | **Semester II** | **Hours / Week 2** | **Total Hours 30** | **Credits 2** |

## COURSE OBJECTIVES

- To know the sequence of a gene using bioinformatic tools.
- To acquire knowledge on biological databases maintained by various institutes.
- To analyze the biological databases using computer softwares.
- To realize evolutionary relationships existing between the organisms.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K3 | CO1 | Apply their knowledge about the details of biological databases. |
| K4 | CO2 | Analyze genetic variations existing among the organisms. |
| K5 | CO3 | Evaluate the quality of tools (algorithms) by analyzing same macromolecule using different tools. |

**21PBO2CN**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Practical: 3 – CELL BIOLOGY, GENETICS, PLANT BREEDING AND BIOSTATISTICS, ECOLOGY, BIOENERGETICS AND NATURAL RESOURCE MANAGEMENT** | | | | |
| **Batch**<br>**2021-2022** | **Semester**<br>**II** | **Hours / Week**<br>**4** | **Total Hours**<br>**60** | **Credits**<br>**2** |

## COURSE OBJECTIVES

- To acquire knowledge about cellular inclusions and their functions
- To understand genetic analysis at gene, genome and population level
- To learn the experimental designs using biostatistical tools.
- To find out the dominant species in the particular environment.
- To understand the structural and functional organization of an ecosystem.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K3 | CO1 | Apply the basic principles of genetics and plant breeding for genetic improvement of plants. |
| K4 | CO2 | Analyze the physico-chemical nature of the soil. Design experimental methods using the statistical knowledge. |
| K5 | CO3 | Determine the distribution of vegetation using quantitative ecological characters. |

**21PBO307**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Paper 7 - TAXONOMY AND BIOSYSTEMATICS** | | | | |
| **Batch**<br>**2021-2022** | **Semester**<br>**III** | **Hours / Week**<br>**6** | **Total Hours**<br>**90** | **Credits**<br>**5** |

## COURSE OBJECTIVES

- To study about the classification and nomenclature of Angiosperms.
- To understand the theory and practices involved in plant systematics.
- To learn the striking affinities of different plant families.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Acquire knowledge both on ICN and APG. |
| K2 | CO2 | Differentiate various systems of classifications based on their natural and phylogenetic characters of flowering plants. |
| K3 | CO3 | Gain the proficiency skills by the use of keys and identify any unknown plant species using the manual of floras. |
| K3 | CO4 | Learn basics of biosystematics |

**21PBO308**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Paper: 8 - MICROBIOLOGY AND PLANT PATHOLOGY** | | | | |
| **Batch**<br>**2021-2022** | **Semester**<br>**III** | **Hours / Week**<br>**6** | **Total Hours**<br>**90** | **Credits**<br>**5** |

## COURSE OBJECTIVES

- To disseminate knowledge on pathogenic group of organisms.
- To gain knowledge on disease management.
- To analyze the quality of water.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Recognize evolutionary relationships of microorganisms through various classifications. |
| K2 | CO2 | Understand skills through isolation and cultural techniques of the microorganisms. |
| K3 | CO3 | Apply the latest methods of microbiological experiments. |
| K3 | CO4 | Implement the disease management techniques in the fields. |

**21PBO309**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Paper 9 – BIOTECHNOLOGY AND NANOBIOLOGY** | | | | |
| **Batch**<br>**2021-2022** | **Semester**<br>**III** | **Hours / Week**<br>**6** | **Total Hours**<br>**90** | **Credits**<br>**5** |

## COURSE OBJECTIVES

- To know the principles and applications of Plant tissue culture
- To learn and familiarize the plant genetic transformation and its application
- To learn the basic knowledge of Nanobiology

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Acquire knowledge on various developments and potential applications of tissue culture. |
| K2 | CO2 | Understand the basic techniques of gene manipulation and their rapid applications in the field of plant tissue culture and genetic engineering |
| K3 | CO3 | Exploit nanotechnological tools to create new biomedical research tools, diagnostic tests and drug delivery systems. |
| K3 | CO4 | Apply the concept of nanotechnology for achieving major task using the nanoparticles. |

**21PBO3CO**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Practical: 4 – TAXONOMY AND BIOSYSTEMATICS, MICROBIOLOGY AND PLANT PATHOLOGY, BIOTECHNOLOGY AND NANOBIOLOGY** | | | | |
| **Batch 2021-2022** | **Semester III** | **Hours / Week 4** | **Total Hours 60** | **Credits 2** |

## COURSE OBJECTIVES

- To identify selected taxa using taxonomic keys.
- To understand the pathogenic organisms causing various diseases.
- To learn the basic techniques of biotechnology and nanobiology

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K3 | CO1 | Acquire knowledge identification and external morphology of plants |
| K4 | CO2 | Analyze the techniques used for the cultivation of microorganisms |
| K5 | CO3 | Gain the hands-on exposure on plant cell and tissue culture and molecular technique |

**21PBO410**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Paper: 10 – BIOPHYSICS, BIOCHEMISTRY AND BIOINSTRUMENTATION** | | | | |
| **Batch 2021-2022** | **Semester IV** | **Hours / Week 7** | **Total Hours 105** | **Credits 5** |

## COURSE OBJECTIVES

- To know the biological importance of the macromolecules
- To learn about the hormones and vitamins and their roles
- To know the principles and operational techniques of bioinstruments
- To understand the role of electrons in absorption of light and To impart knowledge on bioenergetics of living organisms

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Acquire knowledge on properties and nature of macromolecules. |
| K2 | CO2 | Understand the importance of enzymes and immunological techniques. |
| K3 | CO3 | Apply current biochemical and molecular techniques to plan and carry out their experiments. |
| K3 | CO4 | Study and analyze various biological samples |

**21PBO411**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Paper 11 - PLANT PHYSIOLOGY** | | | | |
| **Batch**<br>**2021-2022** | **Semester**<br>**IV** | **Hours / Week**<br>**7** | **Total Hours**<br>**105** | **Credits**<br>**5** |

## COURSE OBJECTIVES

- To study the basic physiological functions of plants.
- To learn about the metabolic pathways in plants.
- To understand the importance of phytohormones in the growth of plants.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Acquire knowledge on water relations in plants. |
| K2 | CO2 | Understand the significance of metabolic pathways in plants. |
| K3 | CO3 | Assess the stress resistance mechanism for the better yield of the crops. |
| K3 | CO4 | Apply the acquired applicable techniques for fruit ripening. |

**21PBO4CP**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **Core Practical 5 - BIOPHYSICS, BIOCHEMISTRY AND BIOINSTRUMENTATION & PLANT PHYSIOLOGY** | | | | |
| **Batch**<br>**2021-2022** | **Semester**<br>**IV** | **Hours / Week**<br>**4** | **Total Hours**<br>**60** | **Credits**<br>**2** |

## COURSE OBJECTIVES

- To quantify the biochemical contents present in a given plant sample
- To utilize the applications of instruments for biochemical studies
- To obtain knowledge on physiological functions of the plants.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K3 | CO1 | Apply the principles of reagents to estimate the macromolecular contents of the plant samples. |
| K4 | CO2 | Handle instruments for biophysics and biochemical practicals |
| K5 | CO3 | Study the physiological process of plants |

**21PBO4Z1**

| **Programme Code: 05** | | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|---|
| **PROJECT WORK & VIVA – VOCE** | | | | |
| **Batch**<br>**2021-2022** | **Semester**<br>**IV** | **Hours / Week**<br>**5** | **Total Hours**<br>**75** | **Credits**<br>**5** |

## COURSE OBJECTIVES

- To acquire inherent knowledge and exposures on relevant practical problems in various fields.
- To execute appropriate analytical skills and skills sets on selected problems.
- To impart insight knowledge on problem solving skills and their proper execution.

## COURSE OUTCOME

On successful completion of the project work, the students will be able to

| | | |
|---|---|---|
| K3 | CO1 | Applying theoretical knowledge in the real field of research |
| K4 | CO2 | Analyzing the importance of tasks in collecting the datas |
| K5 | CO3 | Evaluating relationships existing between theories and experiments |
| K5 | CO4 | Executing appropriate statistical tools and interpretation of appropriate results |

| **Programme Code: 05** | **Title: M.Sc., BOTANY** | | |
|---|---|---|---|
| | **Major Elective 1 - FOREST RESOURCES AND UTILIZATION** | | |
| **Batch**<br>**2021-2022** | **Hours / Week**<br>**6** | **Total Hours**<br>**90** | **Credits**<br>**5** |

## COURSE OBJECTIVES

- To understand the importance and value of trees.
- To learn the revenue sources of the forests.
- To grasp various products derived from forests for the betterment of the human beings.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Recognize the location of the forests in India and their deterioration. |
| K2 | CO2 | Understand the significance of the forests for the enhancement of environmental quality and the reduction of environmental pollution. |
| K3 | CO3 | Apply the knowledge on seasonal variation in production from the forest resources for the human welfare. |
| K3 | CO4 | Implement the acquired knowledge on electricity generation using the biomass. |

| Programme Code: 05 | Title: M.Sc., BOTANY | | |
|---|---|---|---|
| | Major Elective: 2 - SEED TECHNOLOGY | | |
| Batch<br>2021-2022 | Hours / Week<br>6 | Total Hours<br>90 | Credits<br>5 |

## COURSE OBJECTIVES

- To understand the principles of agronomy of seeds.
- To learn the methodology of seed germination, seed drying and seed treatments.
- To know the seed dormancy and their significance

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Recognize seed borne diseases due to genetic constitution and storage of seeds. |
| K2 | CO2 | Determine the seed viability and vigour. |
| K3 | CO3 | Apply knowledge on seed processing and their storage for better marketing. |
| K3 | CO4 | Assess seed dormancy periods of different crop seeds. |

| Programme Code: 05 | Title: M.Sc., BOTANY | | |
|---|---|---|---|
| | Major Elective 3 - FOOD SCIENCE AND NUTRITION | | |
| Batch<br>2021-2022 | Hours / Week<br>6 | Total Hours<br>90 | Credits<br>5 |

## COURSE OBJECTIVES

- To learn the importance of different kinds of foods.
- To acquire knowledge on nutritive values of the foods.
- To create awareness about the food adulterations.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Recognize different nutritive values of cereals, pulses, vegetables and fruits. |
| K2 | CO2 | Understand storage practices of various foods based on their nutrients composition. |
| K3 | CO3 | Apply the acquired knowledge on food processing technology using the naturally available spices and condiments. |
| K3 | CO4 | Assess industrial productions of beverages and their adulterations. |

| Programme Code: 05 | | Title: M.Sc., BOTANY | | |
|---|---|---|---|---|
| | | Major Elective 4 - HORTICULTURE | | |
| **Batch** | **Semester** | **Hours / Week** | **Total Hours** | **Credits** |
| **2021-2022** | **II** | **6** | **90** | **5** |

## COURSE OBJECTIVES

- To learn about the propagation methods of horticultural crops.
- To study about gardening, landscaping and their maintenance.
- To acquire knowledge about commercial floriculture and cut flower arrangements.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Demonstrate solutions for a wide spectrum of plant health issues. |
| K2 | CO2 | Understand the components and adornments of gardening. |
| K3 | CO3 | Develop employability skills in the landscape field. |
| K3 | CO4 | Gain hand's on training knowledge on Terrarium and Bonsai techniques. |

| Programme Code: 05 | Title: M.Sc., BOTANY | | |
|---|---|---|---|
| | Non-Major Elective: 1 – PHARMACOGNOSY | | |
| **Batch** | **Hours / Week** | **Total Hours** | **Credits** |
| **2021-2022** | **6** | **90** | **4** |

## COURSE OBJECTIVES

- To apply the gained knowledge and advice the community on issues concerning the cultivation, harvesting and processing of medicinal plants and their products.
- To classify crude drugs based on their morphological, taxonomical, chemical or pharmacological characters.
- To know the methodology for component analysis of plants.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Recollect the history on indigenous knowledge of Indian traditional systems of medicines. |
| K2 | CO2 | Acquire therapeutic and pharmaceutical knowledge of traditionally used medicinal plants. |
| K3 | CO3 | Apply knowledge on the exploitation of phytoconstituents for production of |

| | | |
|---|---|---|
| | | novel drugs. |
| K3 | CO4 | Train the cultivation and marketing strategies of medicinal plants. |

| Programme Code: 05 | Title: M.Sc., BOTANY | | |
|---|---|---|---|
| | Non-Major Elective: 2 -LIMNOLOGY | | |
| **Batch** | **Hours / Week** | **Total Hours** | **Credits** |
| **2021-2022** | **6** | **90** | **4** |

## COURSE OBJECTIVES

- To study morphological and anatomical characters of aquatic flora.
- To understand the significance of the diffused light for the planktons.
- To find the gross and net productivity in fresh water life forms.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Acquire knowledge on the structure and functions of the freshwater ecosystem. |
| K2 | CO2 | Understand the factors responsible for lotic and lentic ecosystems. |
| K3 | CO3 | Implement the gross and net primary productivity models to know the value of the freshwater ecosystem |
| K3 | CO4 | Apply the knowledge on eutrophication for the conservation and management of fresh water bodies. |

| Programme Code: 05 | Title: M.Sc., BOTANY | | |
|---|---|---|---|
| | Non-Major Elective 3- PLANT BIOTECHNOLOGY | | |
| **Batch** | **Hours / Week** | **Total Hours** | **Credits** |
| **2021-2022** | **6** | **90** | **4** |

## COURSE OBJECTIVES

- To study the basic of plant genome and tissue culture techniques
- To equip students with theoretical knowledge regarding the techniques and applications of Plant Biotechnology and Genetic Engineering
- To help students to get a career in Industry/R&D/Academic

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Describe the genome organizations in plants |
| K2 | CO2 | Elaborate on the plant cell and tissue culture systems |
| K3 | CO3 | Explain the genetic transformation techniques in plants |
| K3 | CO4 | Demonstrate the application of genetic transformation techniques in plants and evaluate the importance of metabolic engineering and molecular farming in plant |

| Programme Code: 05 | Title: M.Sc., BOTANY | | |
|---|---|---|---|
| | Non-Major Elective 4 - MEDICINAL PLANTS | | |
| **Batch** | **Hours / Week** | **Total Hours** | **Credits** |
| **2021-2022** | **6** | **90** | **4** |

## COURSE OBJECTIVES

- To learn about the ethnobotanical knowledge and its traditional significance.
- To understand the role of governmental and non-governmental organizations and their recommended conservation strategies.
- To acquire key knowledge on herbal home remedies.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Recognize about the ethnobotanical significance of medicinal plants. |
| K2 | CO2 | Understand the traditional practices for curing various ailments. |
| K3 | CO3 | Implement knowledge on the ethnomedicinal plants for preventing life threatening diseases. |
| K3 | CO4 | Apply ethnopharmacological knowledge for the development of novel lead drugs. |

**21PBO3X1**

| **Programme Code: 05** | | **For PG STUDENTS** | | |
|---|---|---|---|---|
| **Extra Departmental Course (EDC) - APPLIED HORTICULTURE** | | | | |
| **Batch** | **Semester** | **Hours / Week** | **Total Hours** | **Credits** |
| **2021-2022** | **III** | **2** | **30** | **2** |

## COURSE OBJECTIVES

- To learn about the propagation methods of horticultural crops.
- To study about gardening, landscaping and their maintenance.
- To acquire knowledge about commercial floriculture and cut flower arrangements.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Demonstrate solutions for a wide spectrum of plant health issues. |
| K2 | CO2 | Understand the components and adornments of gardening. |
| K3 | CO3 | Develop employability skills in the landscape field. |
| K3 | CO4 | Gain hand's on training knowledge on Terrarium and Bonsai techniques. |

**21PBO2J1**

| Programme Code: 05 | Title: M.Sc., BOTANY | |
|---|---|---|
| **JOC: 1 - Floriculture and Landscaping** | | |
| **Batch**<br>**2021-2022** | **Hours / Week**<br>**4** | **Credits**<br>**2** |

## COURSE OBJECTIVES

- To know the latest development in the field of floriculture.
- To develop skills in the area of floriculture and landscaping.
- To create knowledge on self employment through entrepreneur skills.

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

| | | |
|---|---|---|
| K1 | CO1 | Acquire knowledge on cultivation of economic flowers. |
| K2 | CO2 | Understand the techniques involved in flower arrangement and decoration. |
| K3 | CO3 | Apply the knowledge on green house cultivation methods. |
| K3 | CO4 | Implement the acquired knowledge on commercial applications of dry flowers. |

**21PBO2J2**

| Programme Code: 05 | Title: M.Sc., BOTANY | |
|---|---|---|
| **JOC: 2 - Food Processing and Preservation** | | |
| **Batch**<br>**2021-2022** | **Hours / Week**<br>**4** | **Credits**<br>**2** |

## COURSE OBJECTIVES

- To know the recent technologies developed in the field of food science
- To develop skills in the area of Food processing and Preservation
- To get employment opportunities in food processing industries

## COURSE OUTCOMES

On successful completion of the course, the students will be able to

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| K1 | CO1 | Recognize about preliminary preparation of food through various processes |
| K2 | CO2 | Understand the nutritive values and their significance of cereals and pulses. |
| K3 | CO3 | Apply knowledge on the dairy products and marketing. |
| K3 | CO4 | Implement food preservation techniques applicable to day to day life. |