

**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 2020-2021**

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO101</b>		<b>Core Paper: 1 -PLANT DIVERSITY - I</b>		
<b>Batch 2020-2021</b>	<b>Semester I</b>	<b>Hours / Week 7</b>	<b>Total Hours 105</b>	<b>Credits 5</b>

#### **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.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO102</b>		<b>Core Paper: 2 -PLANT DIVERSITY - II</b>		
<b>Batch 2020-2021</b>	<b>Semester I</b>	<b>Hours / Week 7</b>	<b>Total Hours 105</b>	<b>Credits 5</b>

#### **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.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO103</b>		<b>Core Paper: 3 –ANATOMY, EMBRYOLOGY OF ANGIOSPERMS AND MICROTECHNIQUES</b>		
<b>Batch 2020-2021</b>	<b>Semester I</b>	<b>Hours / Week 6</b>	<b>Total Hours 90</b>	<b>Credits 5</b>

#### **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.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO1CL</b>		<b>Core Practical: 1 - PLANT DIVERSITY- I &amp; II, ANATOMY, EMBRYOLOGY OF ANGIOSPERMS AND MICROTECHNIQUES</b>		
<b>Batch 2020-2021</b>	<b>Semester I</b>	<b>Hours / Week 4</b>	<b>Total Hours 60</b>	<b>Credits 2</b>

#### **COURSE OBJECTIVES**

- To understand the diversity and distribution of lower life forms.
- To know the variations in the internal structural organization among plants.
- To understand the basic concept and modern techniques of microtome.

#### **COURSE OUTCOMES**

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

K3	CO1	Acquire and analyze interrelationships between algae and fungi.
K4	CO2	Understand the primary and secondary structure of plants.
K5	CO3	Monitor the sequential changes in the internal structure of plants by sectioning through microtechniques.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO204</b>		<b>Core Paper: 4 - BIOINFORMATICS</b>		
<b>Batch 2020-2021</b>	<b>Semester II</b>	<b>Hours / Week 6</b>	<b>Total Hours 90</b>	<b>Credits 4</b>

### 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.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO205</b>		<b>Core Paper: 5 - CELL BIOLOGY, GENETICS, PLANT BREEDING AND BIostatistics</b>		
<b>Batch 2020-2021</b>	<b>Semester II</b>	<b>Hours / Week 6</b>	<b>Total Hours 90</b>	<b>Credits 5</b>

### 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.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO206</b>		<b>Core Paper: 6 - ECOLOGY, BIOENERGETICS AND NATURAL RESOURCE MANAGEMENT</b>		
<b>Batch 2020-2021</b>	<b>Semester II</b>	<b>Hours / Week 6</b>	<b>Total Hours 90</b>	<b>Credits 5</b>

### 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.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO2CM</b>		<b>Core Practical: 2 - BIOINFORMATICS</b>		
<b>Batch 2020-2021</b>	<b>Semester II</b>	<b>Hours / Week 2</b>	<b>Total Hours 30</b>	<b>Credits 2</b>

### 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.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO2CM</b>		<b>Core Practical: 3 – CELL BIOLOGY, GENETICS, PLANT BREEDING AND BIOSTATISTICS, ECOLOGY, BIOENERGETICS AND NATURAL RESOURCES MANAGEMENT</b>		
<b>Batch 2020-2021</b>	<b>Semester II</b>	<b>Hours / Week 4</b>	<b>Total Hours 60</b>	<b>Credits 2</b>

#### **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.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO307</b>		<b>Core Paper: 7 - TAXONOMY AND BIOSYSTEMATICS</b>		
<b>Batch 2020-2021</b>	<b>Semester III</b>	<b>Hours / Week 6</b>	<b>Total Hours 90</b>	<b>Credits 5</b>

#### **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	Explore the uses of medicinal plants through traditional indigenous approaches.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO308</b>		<b>Core Paper: 8 - MICROBIOLOGY AND PLANT PATHOLOGY</b>		
<b>Batch 2020-2021</b>	<b>Semester III</b>	<b>Hours / Week 6</b>	<b>Total Hours 90</b>	<b>Credits 5</b>

#### **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.
K4	CO4	Implement the disease management techniques in the fields.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO309</b>		<b>Core Paper: 9 – BIOTECHNOLOGY AND NANOBIOLOGY</b>		
<b>Batch 2020-2021</b>	<b>Semester III</b>	<b>Hours / Week 6</b>	<b>Total Hours 90</b>	<b>Credits 5</b>

#### **COURSE OBJECTIVES**

- To familiarize with the fundamental principles of biotechnology
- To know the principles and applications of plant tissue culture
- To have a basic knowledge on 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 field of plant tissue culture.
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.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO3CO</b>		<b>Core Practical: 4 – TAXONOMY AND BIOSYSTEMATICS, MICROBIOLOGY AND PLANT PATHOLOGY, BIOTECHNOLOGY AND NANOBIOLOGY</b>		
<b>Batch 2020-2021</b>	<b>Semester III</b>	<b>Hours / Week 4</b>	<b>Total Hours 60</b>	<b>Credits 2</b>

#### 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 culture medium preparation and PCR

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO410</b>		<b>Core Paper: 10 – BIOPHYSICS, BIOCHEMISTRY AND BIOINSTRUMENTATION</b>		
<b>Batch 2020-2021</b>	<b>Semester IV</b>	<b>Hours / Week 7</b>	<b>Total Hours 105</b>	<b>Credits 5</b>

#### 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	Implement knowledge for the separation of bioentities



<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO411</b>		<b>Core Paper: 11 - PLANT PHYSIOLOGY</b>		
<b>Batch 2020-2021</b>	<b>Semester IV</b>	<b>Hours / Week 7</b>	<b>Total Hours 105</b>	<b>Credits 5</b>

### 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.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO4CP</b>		<b>Core Practical: 5 - BIOPHYSICS, BIOCHEMISTRY AND BIOINSTRUMENTATION &amp; PLANT PHYSIOLOGY</b>		
<b>Batch 2020-2021</b>	<b>Semester IV</b>	<b>Hours / Week 4</b>	<b>Total Hours 60</b>	<b>Credits 2</b>

### COURSE OBJECTIVES

- To quantify the biochemical contents present in a given plant sample.
- To utilize proper analytical instruments based on the need.
- 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	Examine the significance of hydrogen ion concentrations in biochemical reactions of the plants.
K5	CO3	Determine the metabolic process of plants using standard procedures.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
<b>Course Code: 20PBO4Z1</b>		<b>PROJECT WORK &amp; VIVA – VOCE</b>		
<b>Batch 2020-2021</b>	<b>Semester IV</b>	<b>Hours / Week 5</b>	<b>Total Hours 75</b>	<b>Credits 5</b>

### COURSE OBJECTIVES

- To acquire knowledge related to the practical problems in various fields.
- To understand the analytical skills to solve the selected problems.
- To get confidence by solving the selected problems through proper execution.

### COURSE OUTCOME

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

K3	CO1	Applying theoretical knowledge in real field.
K4	CO2	Analyzing the importance of the task to collect the related necessary data.
K5	CO3	Evaluating relationships existing between the theories and the fields.
K5	CO4	Executing appropriate statistical tools to get the correct interpretation to present the results.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
		<b>Major Elective: 1 - FOREST RESOURCES AND UTILIZATION</b>		
<b>Batch 2020-2021</b>		<b>Hours / Week 6</b>	<b>Total Hours 90</b>	<b>Credits 5</b>

### 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.

<b>Programme Code: 05</b>	<b>Title: M.Sc., BOTANY</b>		
	<b>Major Elective: 2 - SEED TECHNOLOGY</b>		
<b>Batch 2020-2021</b>	<b>Hours / Week 6</b>	<b>Total Hours 90</b>	<b>Credits 5</b>

### 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.

<b>Programme Code: 05</b>	<b>Title: M.Sc., BOTANY</b>		
	<b>Major Elective 3 - FOOD SCIENCE AND NUTRITION</b>		
<b>Batch 2020-2021</b>	<b>Hours / Week 6</b>	<b>Total Hours 90</b>	<b>Credits 5</b>

### 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.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
		<b>Major Elective 4 - HORTICULTURE</b>		
<b>Batch</b> <b>2020-2021</b>	<b>Semester</b> <b>IV</b>	<b>Hours / Week</b> <b>6</b>	<b>Total Hours</b> <b>90</b>	<b>Credits</b> <b>5</b>

#### **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.

<b>Programme Code: 05</b>		<b>Title: M.Sc., BOTANY</b>		
		<b>Non-Major Elective: 1 – PHARMACOGNOSY</b>		
<b>Batch</b> <b>2020-2021</b>		<b>Hours / Week</b> <b>6</b>	<b>Total Hours</b> <b>90</b>	<b>Credits</b> <b>4</b>

#### **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.

<b>Programme Code: 05</b>	<b>Title: M.Sc., BOTANY</b>		
	<b>Non-Major Elective: 2 -LIMNOLOGY</b>		
<b>Batch 2020-2021</b>	<b>Hours / Week 6</b>	<b>Total Hours 90</b>	<b>Credits 4</b>

### COURSE OBJECTIVES

- To study of 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 structure and functions of fresh water 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 fresh water ecosystem.
K3	CO4	Apply the knowledge on eutrophication for the conservation and management of fresh water bodies.

<b>Programme Code: 05</b>	<b>Title: M.Sc., BOTANY</b>		
	<b>Non-Major Elective: 3- PLANT BIOTECHNOLOGY</b>		
<b>Batch 2020-2021</b>	<b>Hours / Week 6</b>	<b>Total Hours 90</b>	<b>Credits 4</b>

### COURSE OBJECTIVES

- To study the basic and advanced developments in the field of Plant Biotechnology
- 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

<b>Programme Code: 05</b>	<b>Title: M.Sc., BOTANY</b>		
	<b>Non-Major Elective: 4 - MEDICINAL PLANTS</b>		
<b>Batch 2020-2021</b>	<b>Hours / Week 6</b>	<b>Total Hours 90</b>	<b>Credits 4</b>

### 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.

<b>Programme Code: 05</b>		<b>For PG STUDENTS</b>		
<b>Course Code: 20PBO3X1</b>		<b>Extra Departmental Course (EDC) - APPLIED HORTICULTURE</b>		
<b>Batch 2020-2021</b>	<b>Semester III</b>	<b>Hours / Week 2</b>	<b>Total Hours 30</b>	<b>Credits 2</b>

### 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.

<b>Programme Code: 05</b>	<b>Title: M.Sc., BOTANY</b>	
<b>Course Code: 20PBO2J1</b>	<b>JOC: 1 - Floriculture and Landscaping</b>	
<b>Batch 2020-2021</b>	<b>Hours / Week 4</b>	<b>Credits 2</b>

### 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.

<b>Programme Code: 05</b>	<b>Title: M.Sc., BOTANY</b>	
<b>Course Code: 20PBO2J2</b>	<b>JOC: 2 - Food Processing and Preservation</b>	
<b>Batch 2020-2021</b>	<b>Hours / Week 4</b>	<b>Credits 2</b>

### COURSE OBJECTIVES

- To know the latest 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

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

<b>Programme Code: 05</b>		<b>Title: PG Diploma in Biodiversity</b>		
<b>Course Code: 20PDB101</b>		<b>C.P. 1 - INTRODUCTION TO BIODIVERSITY</b>		
<b>Batch</b> 2020-2021	<b>Semester</b> I	<b>Hours / Week</b> 2	<b>Total Hours</b> 30	<b>Credits</b> 2

#### COURSE OBJECTIVES

- To know the principles and concepts of biodiversity.
- To understand the services of species diversity.
- To acquire knowledge on the role of biodiversity in maintaining ecobalance.

#### COURSE OUTCOMES

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

K1	CO1	Know the services of biodiversity.
K2	CO2	Understand the types of species diversity.
K3	CO3	Analyze the concepts of biodiversity.
K3	CO4	Evaluate the economic value of biodiversity

<b>Programme Code: 05</b>		<b>Title: PG Diploma in Biodiversity</b>		
<b>Course Code: 20PDB102</b>		<b>C.P.2 - VALUES, USES AND LOSS OF BIODIVERSITY</b>		
<b>Batch</b> 2020-2021	<b>Semester</b> I	<b>Hours / Week</b> 2	<b>Total Hours</b> 30	<b>Credits</b> 2

#### COURSE OBJECTIVES

- To know the value of biodiversity.
- To understand the valuation methods of species content.
- To gain knowledge on the factors of species loss.

#### COURSE OUTCOMES

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

K1	CO1	Know the values of bioresources.
K2	CO2	Know the possible ways to reduce the ecosystem loss.
K3	CO3	Understand the role of several factors on biodiversity loss.
K3	CO4	Evaluate the values of species by various methods



<b>Programme Code: 05</b>		<b>Title: PG Diploma in Biodiversity</b>		
<b>Course Code: 20PDB103</b>		<b>C.P. 3 - CONSERVATION AND MANAGEMENT OF BIODIVERSITY</b>		
<b>Batch 2020-2021</b>	<b>Semester I</b>	<b>Hours / Week 2</b>	<b>Total Hours 30</b>	<b>Credits 2</b>

#### COURSE OBJECTIVES

- To know the methods of conservation of species.
- To gain knowledge in the area of ecosystem conservation.
- To know the various laws of biodiversity conservation.

#### COURSE OUTCOMES

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

K1	CO1	Know the species conservation methods.
K2	CO2	Understand the <i>in situ</i> and <i>ex situ</i> conservation strategies.
K3	CO3	Understand the laws prevailing in biodiversity conservation both at national and international levels.
K3	CO4	Analyze the ecosystem conservation by novel strategies.

<b>Programme Code: 05</b>		<b>Title: PG Diploma in Biodiversity</b>		
<b>Course Code: 20PDB1CL</b>		<b>C.Pr.1. Biodiversity</b>		
<b>Batch 2020-2021</b>	<b>Semester I</b>	<b>Hours / Week 2</b>	<b>Total Hours 30</b>	<b>Credits 2</b>

#### COURSE OBJECTIVES

- To learn the techniques for plant community analysis.
- To know the complexity and diversity of plant communication.
- To have the knowledge on endangered animals in protected areas.

#### COURSE OUTCOMES

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

K3	CO1	Understand the programmes being carried out to conserve species in protected areas.
K4	CO2	Investigate the biodiversity status of plant communities.
K5	CO3	Analyze the plant community quantitatively.

<b>Programme Code: 05</b>		<b>Title: PG Diploma in Biodiversity</b>		
<b>Course Code: 20PDB204</b>		<b>C.P.4 - BIODIVERSITY PROSPECTING AND INDIGENOUS KNOWLEDGE SYSTEM (IKS) AND BIOTECHNOLOGY FOR BIODIVERSITY</b>		
<b>Batch 2020-2021</b>	<b>Semester II</b>	<b>Hours / Week 2</b>	<b>Total Hours 30</b>	<b>Credits 2</b>

#### **COURSE OBJECTIVES**

- To know the ethnic communities of India and their role in bioresource management.
- To understand the bioprospecting of natural bioresources.
- To gain knowledge on the role of biotechnology in processing biogoods.

#### **COURSE OUTCOMES**

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

K1	CO1	Know the practices of ethnic groups in conserving wild species.
K2	CO2	Know the database of biodiversity.
K3	CO3	Understand the bioprospecting principles.
K3	CO4	Apply the biotechnological tools for bioprocessing.

<b>Programme Code: 05</b>		<b>Title: PG Diploma in Biodiversity</b>		
<b>Course Code: 20PDB205</b>		<b>C.P.5 - WILDLIFE BIOLOGY AND CONSERVATION POLICIES AND LAW</b>		
<b>Batch 2020-2021</b>	<b>Semester II</b>	<b>Hours / Week 2</b>	<b>Total Hours 30</b>	<b>Credits 2</b>

#### **COURSE OBJECTIVES**

- To understand the values and ethics in wild life conservation.
- To know the diversity and importance of avian fauna.
- To gain knowledge on issues in wildlife conservation.

#### **COURSE OUTCOMES**

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

K1	CO1	Know the diversity in avian fauna.
K2	CO2	Know the places of application of Indian Forest Law for forest protection.
K3	CO3	Understand the values and ethics of wildlife conservation.
K3	CO4	Analyze the current issues in wild life conservation.

<b>Programme Code: 05</b>		<b>Title: PG Diploma in Biodiversity</b>		
<b>Course Code: 20PDB2Z1</b>		<b>Project Work and Vivo – Voce</b>		
<b>Batch 2020-2021</b>	<b>Semester II</b>	<b>Hours / Week 4</b>	<b>Total Hours 60</b>	<b>Credits 4</b>

### **COURSE OBJECTIVES**

- To gain knowledge on species diversity at microbe, plant and animal level in natural vegetations.
- To learn the techniques used to sample the vegetation.
- To understand the modern methods in conservation of species.

### **COURSE OUTCOMES**

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

K3	CO1	Develop local-specific management strategies for the sustainable utilization and conservation of bioresources.
K4	CO2	Analyze the population structure of flora in natural vegetation.
K5	CO3	Evaluate the population size of various wild animals in forests.