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)

B.SC. BOTANY

For the students admitted
in the Academic Year 2021-2022

21UBO101

Programme Code: 05		Title: B.Sc., BOTANY		
Core Paper: 1 - BIODIVERSITY – I (Bacteria, Virus, Algae, Fungi, Lichens and Plant Pathology)				
Batch	**Semester**	**Hours / Week**	**Total Hours**	**Credits**
2021-2022	**I**	**7**	**105**	**4**

COURSE OBJECTIVES

- To acquire knowledge on evolution of Microbes and Thallophytes and to know about the diversity patterns of lower life forms on earth.
- To understand the distribution, structure, reproduction and life cycle patterns of lower life forms like bacteria, virus, algae, fungi and lichens.
- To know the economic value of lower organisms.

COURSE OUTCOMES

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

K1	CO1	Differentiate, identify and classify the algal species using algal pigments.
K2	CO2	To know the bacteria, virus and primitive plants of the earth. Know about the distribution and mode of nutrition of algal, fungal species.
K3	CO3	To study the structure, reproduction and life cycle patterns of bacteria, virus, algae, fungi and lichens
K3	CO4	Apply their knowledge on the involvement of lichen as the indicators of pollution.

SEMESTER I

PART IV - ENVIRONMENTAL STUDIES

Total Credits: 2 **Total Hours: 30**

Objectives:

- To inculcate knowledge and create awareness about ecological and environmental concepts, issues and solutions to environmental problems.
- To shape students into good “ecocitizens” thereby catering to global environmental needs.

21UBO202

Programme Code: 05	**Title: B.Sc., BOTANY**			
Core Paper: 2 - PLANT DIVERSITY – II				
Batch 2021-2022	**Semester II**	**Hours / Week 7**	**Total Hours 105**	**Credits 4**

COURSE OBJECTIVES

- To know about the diversity of Cryptogams and Phanerogams.
- To understand the life cycle pattern of Bryophytes, Pteridophytes and Gymnosperms.
- To study the fossil remains of plants belonging to various eras of Palaeobotany.

COURSE OUTCOMES

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

K1	CO1	Acquire knowledge on diversity among Bryophytes, Pteridophytes and Gymnosperms.
K2	CO2	Understand the internal structure and reproduction of Cryptogams and Phanerogams
K3	CO3	Apply the medicinal and economic knowledge of Bryophytes, Pteridophytes and Gymnosperms for the benefit of human welfare.
K3	CO4	Implement the knowledge on past evidences of fossils for the identification and also to determine the age of the fossil plants through radiocarbon dating.

21UBO2CL

Programme Code: 05	**Title: B.Sc., BOTANY**			
Core Practical 1: BIODIVERSITY I & PLANT DIVERSITY – II				
Batch 2021-2022	**Semester II**	**Hours / Week 2**	**Total Hours 30**	**Credits 2**

COURSE OBJECTIVES

- To enable students to know about the diversity of lower organisms.
- To understand the life cycle pattern of Bacteria, Virus, Algae, Fungi, Lichens, Bryophytes, Pteridophytes, Gymnosperms and Paleaobotany.
- To study the fossil remains of plants in the division of Palaeobotany.

COURSE OUTCOMES

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

K3	CO1	Understand the primitive and advanced nature of Microbes and Thallophytes
K4	CO2	Analyze the internal organization of Cryptogams and Phanerogams
K5	CO3	Analyse the pathogenic microorganisms causing various plant diseases

21VED201

SEMESTER – II

PART – IV VALUE EDUCATION: MORAL AND ETHICS

Total Hours: 30 **Total Credits: 2**

OBJECTIVES:

- ➢ To impart Value Education in every walk of life.
- ➢ To help the students to reach excellence and reap success.
- ➢ To impart the right attitude by practicing self introspection.
- ➢ To portray the life and messages of Great Leaders.
- ➢ To insist the need for universal brotherhood, patience and tolerance.
- ➢ To help the students to keep them fit.
- ➢ To educate the importance of Yoga and Meditation.

21UBO303

Programme Code : 05		**Title: B.Sc., BOTANY**		
Core Paper: 3 – ANATOMY AND EMBRYOLOGY OF ANGIOSPERMS				
Batch	**Semester**	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	**III**	**5**	**75**	**4**

COURSE OBJECTIVES

1. To inculcate knowledge on the basics of tissues and anatomical features of plants
2. To differentiate the primary and secondary anatomical structure of dicot and monocot plants
3. To understand the key aspects of reproductive systems of flowering plants.

COURSE OUTCOME

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

K1	CO1	Know about the various developmental aspects of the plants.
K2	CO2	Compare and identify the structural differences existing among the vascular plants.
K3	CO3	Imply the embryological and anatomical knowledge to differentiate the plant taxa.

21UGA3S1

PART IV - III SEMESTER
SKILL BASED SUBJECT 1 - GENERAL AWARENESS (ONLINE)

Total Credits: 3 **Total Hours: 30**

Objectives

1. To acquire knowledge in relation to various competitive examinations.
2. To create awareness about an online examination which is being followed in competitive examinations.

21UBO404

Programme Code: 05		**Title: B.Sc., BOTANY**		
Core Paper: 4 - BIOPHYSICS AND BIOSTATISTICS				
Batch **2021-2022**	**Semester** **IV**	**Hours / Week** **5**	**Total Hours** **75**	**Credits** **4**

COURSE OBJECTIVES

- To understand the nature, pathways and application of light energy.
- To learn the basic principles of biostatistics.
- To impart knowledge to solve the biological problems.

COURSE OUTCOMES

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

K1	CO1	Recognize the dual nature of the light and its reactions with the matter with reference to plants.
K2	CO2	Understand the basic concepts of thermodynamics.
K3	CO3	Impart knowledge on radioactivity and their effects on biological tissues.
K3	CO4	Apply the biostatistical formulae to solve the biological related problems.

21UBO4CM

Programme Code : 05	**Title : B.Sc., Botany**			
CORE PRACTICAL: 2 – ANATOMY AND EMBRYOLOGY OF ANGIOSPERMS & BIOPHYSICS AND BIOSTATISTICS				
Batch **2021 - 2022**	**Semester** **IV**	**Hours/Week** **2**	**Total Hours** **30**	**Credits** **2**

COURSE OBJECTIVES

- To learn about the special structures associated with the plants.
- To obtain knowledge on primary, secondary and anomalous structures of the plants
- To understand and solve the biological related problems

COURSE OUTCOME

K3	CO1	Analyze various internal and external structures of the plants.
K4	CO2	Dissect different stages of embryos of *Tridax* plant.
K5	CO3	Evaluate the normal distribution pattern of a given population.

21UBO4S2

Programme Code: 05	**Title: B.Sc., BOTANY**			
SKILL BASED SUBJECT: II – APPLIED MICROBIOLOGY				
Batch **2021-2022**	**Semester** **IV**	**Hours / Week** **2**	**Total Hours** **30**	**Credits** **3**

COURSE OBJECTIVES

- To provide the basic knowledge of microbes
- To introduce the techniques involved in microbiology.
- To assess the role of microorganisms in human welfare.

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COURSE OUTCOMES

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

K1	CO1	Acquire knowledge on the fundamental techniques in microbiology.
K2	CO2	Understand the use of microbes in industries for the welfare of mankind.
K3	CO3	Impart knowledge on preservation of food and vegetables using suitable techniques for the commercial uses throughout the year.
K3	CO4	Apply knowledge on distribution of microbes in environment and prevent their harmful effects.

21UBO505

Programme Code: 05		**Title: B.Sc., BOTANY**		
CORE PAPER: 5 - FUNDAMENTALS OF COMPUTER AND BIOINFORMATICS				
Batch **2021-2022**	**Semester** **V**	**Hours / Week** **4**	**Total Hours** **60**	**Credits** **4**

COURSE OBJECTIVES

- To acquire basic knowledge about the computers.
- To know how to create the databases.
- To impart knowledge on biological informations available in the databases.

COURSE OUTCOMES

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

K1	CO1	Inherit computer knowledge and internet usage.
K2	CO2	Understand the components of computer and usage of biological databases.
K3	CO3	Applying the technical skills to know the sequences of nucleic acids and amino acids in genes and protein molecules.
K3	CO4	Identify the structures of various biomolecules using biomolecular visualization techniques.

21UBO506

Programme Code: 05		**Title: B.Sc., BOTANY**		
CORE PAPER 6 - TAXONOMY OF ANGIOSPERMS AND ECONOMIC BOTANY				
Batch **2021-2022**	**Semester** **V**	**Hours / Week** **4**	**Total Hours** **75**	**Credits** **5**

COURSE OBJECTIVES

- To recognize the plant families of major flowering plants and their diagnostic features.
- To acquire basic knowledge on the principles of phylogeny and biosystematics.
- To familiarize knowledge on plants with immense economic values.

COURSE OUTCOMES

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

K1	CO1	Acquire better knowledge on plant identification
K2	CO2	Understand nomenclature principles of flowering plants
K3	CO3	Gain hands on experience on herbarium preparation techniques
K3	CO4	Familiarize immense knowledge on economic importance of higher plants

21UBO507

Programme Code: 05		**Title: B.Sc., BOTANY**		
CORE PAPER 7 - CYTOLOGY, GENETICS & PLANT BREEDING				
Batch **2021-2022**	**Semester** **V**	**Hours / Week** **4**	**Total Hours** **60**	**Credits** **5**

COURSE OBJECTIVES

- To learn the cellular details, cell organelles and their functions.
- To acquire knowledge on genes and their interactions.
- To gain knowledge on plant breeding methods and crop improvement programmes.

COURSE OUTCOMES

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

K1	CO1	Familiarize structural organizations of cells and cellular mechanisms.
K2	CO2	Understand and explain scientific principles behind nature and function of genes and their process of inheritance.
K3	CO3	Apply the acquired knowledge on character exchanges among the individuals due to crossing over.
K3	CO4	Implement the plant breeding techniques for crop improvement.

21UBO508

Programme Code: 05		**Title: B.Sc., BOTANY**		
CORE PAPER 8 - PLANT ECOLOGY, PHYTOGEOGRAPHY AND RESOURCE CONSERVATION				
Batch **2021-2022**	**Semester** **V**	**Hours / Week** **4**	**Total Hours** **75**	**Credits** **5**

COURSE OBJECTIVES

- To understand the principles of ecosystem.
- To acquire basic knowledge about community succession
- To ensure knowledge on resource conservation and related environmental acts

COURSE OUTCOMES

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

K1	CO1	Pertain knowledge on principle factors controlling the environment.
K2	CO2	Understand the distribution of plant species across the country.
K3	CO3	Assess the natural vegetational structures of the given geographical locations.
K3	CO4	Explore knowledge on natural resources available for the benefit of mankind.

21UBO5CN

Programme Code: 05		**Title : B.Sc., BOTANY**		
CORE PRACTICAL 3 - FUNDAMENTALS OF COMPUTER AND BIOINFORMATICS				
Batch 2021-2022	**Semester V**	**Hours/Week 2**	**Total Hours 30**	**Credits 2**

COURSE OBJECTIVES

- To insist basic knowledge on the components of the computer.
- To create a document, table, chart and database using MS Office.
- To learn sequence and structure of genes and protein molecules.

COURSE OUTCOMES

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

K3	CO1	Apply knowledge to create biological databases.
K4	CO2	Analyze secondary structure predictions of any protein molecules using appropriate biological softwares.
K5	CO3	Examine macromolecular structures through visualization tools.

21UBO5CO

Programme Code: 05		**Title : B.Sc., BOTANY**		
Core Practical 4: Taxonomy of Angiosperms, Economic Botany, Cytology, Genetics, Plant Breeding, Plant Ecology, Plant Phytogeography and Resource Conservation				
Batch 2021- 2022	**Semester V**	**Hours/Week 4**	**Total Hours 60**	**Credits 2**

COURSE OBJECTIVES

- To learn the morphological, taxonomical and economic values of the plants.
- To impart knowledge on the determination of types of vegetations using quantitative ecological characters.
- To study the different types of eco-system
- To study the cellular details, genetic constitution and plant breeding techniques.

COURSE OUTCOMES

K3	CO1	Apply knowledge to segregate species variation using dichotomous keys.
K4	CO2	Analyze the progress of cell division and their significance for the
K5	CO3	Determine the distribution of vegetations in a given habitat using various quadrat methods.

21UBO609

Programme Code: 05		Title: B.Sc., BOTANY		
CORE PAPER 9 – BIOCHEMISTRY AND BIOINSTRUMENTATION				
Batch	**Semester**	**Hours / Week**	**Total Hours**	**Credits**
2021-2022	**VI**	**6**	**90**	**4**

COURSE OBJECTIVES

- To study the structure of atom and chemical bonds
- To learn the metabolism of chemical reactions in a cell
- To seed the basic knowledge about instruments
- To make students understand the applications of instruments and to train the students handle and maintain the instruments

COURSE OUTCOMES

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

K1	CO1	Gain knowledge on chemical bonds, atoms and molecules.
K2	CO2	Understand the chemical structure of macro molecules.
K3	CO3	Direct applications and benefits of instruments are discussed with hands-on training to students
K3	CO4	Critical steps and important calculations are taught and asked the students to analyze the same

21UBO610

Programme Code: 05	Title : B.Sc., BOTANY			
CORE PAPER: 10 - PLANT PHYSIOLOGY				
Batch	**Semester**	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	**VI**	**6**	**90**	**5**

COURSE OBJECTIVES

- To study about water potential and its components
- To understand the mechanism of various metabolic process in plants
- To acquire inherent knowledge on mineral nutrients, growth and development in plants

COURSE OUTCOME

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

K1	CO1	Gain the knowledge on the relationship of complementary metabolic process in energy acquisition.
K2	CO2	Understand the water potential and its effects on cellular functions.
K3	CO3	Apply the knowledge on physiological mechanisms of growth regulators in plants.
K3	CO4	Demonstrate detailed understanding of the physiological mechanisms involved in the uptake and transport of water.

21UBO611

Programme Code: 05	**Title: B.Sc., BOTANY**			
CORE PAPER 11- HORTICULTURE				
Batch **2021-2022**	**Semester** **IV**	**Hours / Week** **6**	**Total Hours** **90**	**Credits** **4**

COURSE OBJECTIVES

- To learn about the propagation methods of horticultural crops.
- To study the various types of gardening, landscaping and their management.
- To know about commercial floriculture and their significance.

COURSE OUTCOMES

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

K1	CO1	Describe various horticultural practices
K2	CO2	Understand solutions to develop a wide variety of plants through vegetative propagules.
K3	CO3	Develop bonsai plants using various techniques.
K3	CO4	Preserve food and vegetables using suitable techniques for the commercial uses throughout the year.

21UBO6CP

Programme Code: 05	**Title : B.Sc., BOTANY**			
Core Practical 5 – BIOCHEMISTRY, BIOINSTRUMENTATION, PLANT PHYSIOLOGY AND HORTICULTURE				
Batch 2021-2022	**Semester VI**	**Hours/Week 4**	**Total Hours 60**	**Credits 2**

COURSE OBJECTIVES

- To acquire skills on handling of the instruments.
- To learn sequence and structure of genes and protein molecules.
- To learn principles and applications of instruments
- To provide hands-on techniques on instruments
- To learn metabolic process of the plants.

COURSE OUTCOMES

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

K3	CO1	Apply knowledge on instrumentation techniques.
K4	CO2	Apply knowledge on handling and troubleshooting of instruments.
K5	CO3	Examine the various parts and functional units of instruments.

21UBO6S3

Programme Code: 05	**Title: B.Sc., BOTANY**			
SKILL BASED SUBJECT III: CULTIVATION AND MARKETING OF MEDICINAL PLANTS				
Batch 2021-2022	**Semester VI**	**Hours / Week 2**	**Total Hours 30**	**Credits 3**

COURSE OBJECTIVES

- To gain the knowledge on scope, importance and conservation strategies of medicinal plants
- To understand the medicinal values of various parts of the medicinal plants.
- To understand the present scenario on marketing of medicinal plants.
- To obtain basic knowledge on Intellectual property rights (IPR)

COURSE OUTCOMES

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

K1	CO1	To know about *in situ* and *ex situ* conservation of various medicinal plants.
K2	CO2	To gain the knowledge on utilization of various herbal medicines for home remedies.
K3	CO3	Students to gain the knowledge on various marketing and trade on medicinal plants
K3	CO4	To acquire inherit knowledge on IPR and their applications

21UBO6Z1

Programme Code: 05		Title: B.Sc., BOTANY		
PROJECT WORK & VIVA – VOCE				
Batch 2021-2022	**Semester VI**	**Hours / Week 2**	**Total Hours 30**	**Credits 5**

COURSE OBJECTIVES

- To know the practical problems in various fields of Botany.
- To understand and collect related data in the selected fields.
- To apply suitable skills and to solve 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 skill sets in lab oriented experiments
K4	CO2	Analyzing the importance of project work while collecting necessary data
K5	CO3	Evaluating variations between theories and experiments.
K5	CO4	Executing standard operating procedures and interpretation of appropriate results.

Programme Code: 05	Title: B.Sc., BOTANY		
	Major Elective: 1 - FORESTRY		
Batch 2021-2022	**Hours / Week 4**	**Total Hours 60**	**Credits 5**

COURSE OBJECTIVES

- To understand the basic concepts of forest and their distribution types.
- To acquire knowledge on forest resources and their utilization.
- To gain knowledge on laws of conservation of forests.

COURSE OUTCOMES

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

K1	CO1	Recognize the importance of forest produce to mankind.
K2	CO2	Understand the economic value of forest and their importance to the society.
K3	CO3	Reclamation of wastelands with suitable tree species.
K3	CO4	Implement the economic benefits of trees in day to day life

Programme Code: 05	Title: B.Sc., BOTANY		
	Major Elective: 2 - BIOTECHNOLOGY		
Batch 2021-2022	**Hours / Week 4**	**Total Hours 60**	**Credits 5**

COURSE OBJECTIVES

- To familiarize the fundamental principles of biotechnology and plant tissues techniques
- To obtain knowledge on various developments and potential applications of gene cloning technology and Genetic transformation and their application in plants
- To know the basic principles, knowledge and applications of bio-fertilizers, waste water treatment and biomass and bioenergy production
- To acquire inherit knowledge on the basic principles and applications of Bioethics and Biosafety

COURSE OUTCOMES

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

K1	CO1	Students can gain the basic concepts of biotechnology and plant cell and tissue culture techniques
K2	CO2	Students can understand and gain the knowledge on gene cloning techniques, methods of gene transfer in plants and application and various tools and techniques in molecular biology
K3	CO3	Students can acquire the knowledge and application of microbes used for biofertilizer preparation, waste water treatments and biomass and energy production
K3	CO4	Students can acquire knowledge on principles of Biosafety and assessment procedures of food related products

Programme Code: 05	**Title: B.Sc., BOTANY**		
	Major Elective: 3 - FOOD SCIENCE		
Batch **2021-2022**	**Hours / Week** **4**	**Total Hours** **60**	**Credits** **5**

COURSE OBJECTIVES

- To know about the food groups and food preparation.
- To understand the food processing technology and preservation of food.
- To analyze and disseminate food related issues.

COURSE OUTCOMES

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

K1	CO1	Acquire knowledge on manufacturing processes and technologies used in the production of food products
K2	CO2	Understand the knowledge on the process of food product development and their environmental consideration.
K3	CO3	Explain the functional properties of food in human nutrition.
K3	CO4	Develop skills in researching, analyzing and communicating food related issues.

Programme Code: 05	**Title: B.Sc., BOTANY**		
	Major Elective: 4 - SEED BIOLOGY		
Batch **2021-2022**	**Hours / Week** **4**	**Total Hours** **60**	**Credits** **5**

COURSE OBJECTIVES

- To study the structure of angiospermic seeds
- To analyze various products produced by the seeds.
- To examine the germination capacity of the seeds.

COURSE OUTCOMES

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

K1	CO1	Recognize the chemical and physical properties of seeds.
K2	CO2	Understand the factors responsible for seed germination.
K3	CO3	Apply the various methods of processing of seeds for storage.
K3	CO4	Implement knowledge to break the seed dormancy and to enhance the plant growth.

Programme Code: 05	**Title: B.Sc., BOTANY**		
	Major Elective: 5 – PHARMACOGNOSY		
Batch 2021-2022	**Hours / Week 4**	**Total Hours 60**	**Credits 5**

COURSE OBJECTIVES

- To study the drug development from medicinal plants.
- To understand the traditional systems of medicines like Ayurveda, Siddha & Unani.
- To know the pharmacological actions of plant drugs.

COURSE OUTCOME

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

K1	CO1	Acquire knowledge on the therapeutic uses of plant drugs.
K2	CO2	Understand the traditional and modern system of medicine.
K3	CO3	Relates physiological action of various plant drugs.
K3	CO4	Recognize route of drug administration and its pharmaceutical dosage forms.

Programme Code: 05	**Title: B.Sc., BOTANY**		
	Major Elective 6 - MUSHROOM CULTIVATION TECHNOLOGY		
Batch 2021-2022	**Hours / Week 4**	**Total Hours 60**	**Credits 5**

COURSE OBJECTIVES

- To understand the Importance of mushrooms.
- To learn the methodology involved in mushroom cultivation.
- To know the disease management.

COURSE OUTCOMES

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

K1	CO1	Recognize the nutritive, medicinal and food values of mushrooms.
K2	CO2	Determine suitable climate and cultivation techniques for different mushrooms.
K3	CO3	Relate knowledge on designing farming houses for various mushrooms.
K3	CO4	Apply knowledge on processing and storage for better marketing.

21UBO1A1

Programme Code: 05		**For B.Sc., ZOOLOGY**		
ALLIED-1 BOTANY: 1 (PHYCOLOGY, MYCOLOGY, PLANT PATHOLOGY, BRYOPHYTES, PTERIDOPHYTES & GYMNOSPERMS) (FOR ZOOLOGY STUDENTS)				
Batch	**Semester**	**Hours / Week**	**Total Hours**	**Credits**
2021-2022	**I**	**5**	**75**	**4**

COURSE OBJECTIVES

- To study the classification of Cryptogams & Gymnosperms.
- To learn the structure and life cycle patterns of primitive to advanced life forms.
- To impart knowledge on the economic values of plants.

COURSE OUTCOMES

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

K1	CO1	Gain knowledge on disease causing microorganisms.
K2	CO2	Understand the life cycle patterns of Cryptogams and Gymnosperms.
K3	CO3	Explore the economic importance of lower life forms.
K3	CO4	Apply their knowledge to identify plant diseases and their control measures.

21UBO2A2

Programme Code: 05	**For B.Sc., ZOOLOGY**
Allied-2 Botany 2 : ANATOMY, EMBRYOLOGY, TAXONOMY OF ANGIOSPERMS, PHYSIOLOGY AND ENVIRONMENTAL BOTANY (FOR ZOOLOGY STUDENTS)	

Batch	**Semester**	**Hours / Week**	**Total Hours**	**Credits**
2021-2022	**II**	**5**	**75**	**4**

COURSE OBJECTIVES

- To differentiate the anatomical and reproductive features of monocot and dicots.
- To acquire knowledge on the classification and nomenclature of Angiosperms.
- To understand physiological process and metabolism in plants.

COURSE OUTCOMES

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

K1	CO1	Recognize structural organization and morphological variations among the Angiospermic taxa.
K2	CO2	Understand the use of keys and manuals for identifying any unknown plants at species level.
K3	CO3	Application of micronutrients and growth regulators for the development of plants.
K3	CO4	Explore knowledge on ecosystems, environmental pollution and soil conservation strategies.

21UBO2AL

Programme Code: 05		For B.Sc., ZOOLOGY		
ALLIED PRACTICAL BOTANY- I & II				
Batch	**Semester**	**Hours/Week**	**Total Hours**	**Credits**
2021 - 2022	**II**	**2**	**30**	**2**

COURSE OBJECTIVES

- To acquire knowledge on the morphological and anatomical features of vascular plants.
- To create basic skills on biosystematics and herbarium preparation techniques.
- To learn the basic concepts and principles of ecosystem.

COURSE OUTCOMES

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

K3	**CO1**	Apply knowledge on the identification of lower life forms.
K4	**CO2**	Analyze various diseases and their impact on crop plants
K5	**CO3**	Examine physiological process that occur in plant life .

21UBO5X1

Programme Code: 05		**For UG STUDENTS**		
Extra Departmental Course (EDC) - MEDICINAL BOTANY AND HUMAN WELFARE				
Batch **2021-2022**	**Semester** **V**	**Hours / Week** **2**	**Total Hours** **30**	**Credits** **3**

COURSE OBJECTIVES

- To study the Indian system of traditional medicine.
- To gain knowledge on pharmacognosy of medicinal plants.
- To familiarize cultivation technologies of medicinal plants.

COURSE OUTCOMES

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

K1	CO1	Recognize crude drugs used in traditional system of medicine.
K2	CO2	Understand the therapeutic potential of crude drugs.
K3	CO3	Apply the knowledge in the cultivation practices of medicinal plants.
K3	CO4	Implement knowledge in identifying novel drug leads against allopathic medicine.

21UHR3N1

Programme Code : 05	Title: B.Sc., BOTANY		
	Non- Major Elective 1 – HUMAN RIGHTS		
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	**2**	**30**	**2**

Course Objectives

1. To prepare for responsible citizenship with awareness of the relationship between Human Rights, democracy and development.
2. To impart education on national and international regime on Human Rights.
3. To sensitive students to human suffering and promotion of human life with dignity.
4. To develop skills on human rights advocacy
5. To appreciate the relationship between rights and duties
6. To foster respect for tolerance and compassion for all living creature.

21UWR4N2

Programme Code : 05	Title: B.Sc., BOTANY		
	Non- Major Elective II – WOMEN'S RIGHTS		
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	**2**	**30**	**2**

COURSE OBJECTIVES

- To know about the laws enacted to protect women against violence.
- To impart awareness about the hurdles faced by women.
- To develop a knowledge about the status of all forms of women to access to justice.
- To create awareness about women's rights.
- To know about laws and norms pertaining to protection of women.
- To understand the articles which enables the women's rights.
- To understand the Special Women Welfare laws.
- To realize how the violence against women puts an undue burden on health care services.

Programme Code : 05	Title: B.Sc., BOTANY		
	Non- Major Elective III – Consumer Affairs		
Batch 2021-2022	Hours/Week 2	Total Hours 30	Credits 2

Course Objectives

1. To familiarize the students with their rights and responsibilities as a consumer.
2. To understand the procedure of redress of consumer complaints, and the role of different agencies in establishing product and service standards.
3. To have a handle the business firms' interface with consumers and the consumer related regulatory and business environment.