DEPARTMENT OF BOTANY
With effect from the academic year 2020 – 2021

Programme Outcomes(POs)

PO	Upon completion of B.ScProgramme, the graduates will beable to:
PO – 1	utilize scientific knowledge to pursue higher studies in the relevant field.
PO – 2	create innovative ideas to enhance entrepreneurial skills for economic independence.
PO – 3	face challenging competitive examinations that offer rewarding careers.
PO – 4	reflect upon green initiatives and take responsible steps to build a sustainable environment.
PO – 5	handle ethical issues with social responsibility.
PO – 6	communicate effectively and collaborate successfully with peers to become competent professionals.

Programme Educational Objectives (PEOs)

PEO-1	The graduates will apply appropriate theory and scientific knowledge to participate in activities that support humanity and economic development nationally and globally, developing as leaders in their fields of expertise.
PEO-2	The graduates pursue lifelong learning and continuous improvement of the knowledge and skills with the highest professional and ethical standards.
PEO-3	The graduates acquire basic and specialized science skills that instill qualities of self-confidence and self-reliance that make them contribute valuably in the biological issues of national and international interest.

Programme Specific Outcomes (PSOs)

PSOs No.	Upon completion of B.Sc. Degree Programme, the graduates of Botany will be able to :	PO Addressed
PSO - 1	develop a strong and competent knowledge in Botany.	1
PSO - 2	communicate appropriately and effectively in science and also interact productively with people from diverse background.	6
PSO - 3	understand the basic professional skills through various laboratory technical training, to analyze the relevant biological situations.	2
PSO - 4	create green environment to protect nature for future sustenance.	4
PSO - 5	seek entrepreneurship through skill based, value added and related courses.	2
PSO - 6	understand the professional, ethical, legal and social issues related to gender.	5
PSO - 7	integrate the related topics from other branches of science to carry out projects to have a successful career.	3

Semester - I

Algae, Fungi and Lichens

Sub. Code: BC2011

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO - 1	identify the salient features of different classes of Algae, Fungi and Lichens and their adaptive strategies	PSO - 1	R
CO - 2	understand the importance of lower plants to the economy and environment	PSO - 4	U
CO - 3	interpret the values of AM Fungi	PSO - 3	Ap
CO –4	correlate the structure, reproduction and life cycle of different classes of Algae and Fungi	PSO - 1	E
CO –5	differentiate diverse group of Algae and Fungi based on their hierarchy	PSO - 5	An

Major Practical - I

Algae, Fungi and Lichens

Sub. Code: BC20P1

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	preparation of plant material for microscopic observation	PSO - 3	Cr
CO - 2	draw appropriate anatomical diagrams from the sectioned plant material using microscope	PSO - 3	An
CO - 3	identify different microalgae from water bodies	PSO - 1	U
CO - 4	identify the microscopic structures of Algae, Fungi and Lichens	PSO - 1	U
CO - 5	record the locally available seaweeds	PSO - 1	U

Allied - Chemistry of Life

Sub. Code: BA2011

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO – 1	learn the structure, chemistry and functions of cellular organelles and non-living inclusions	PSO - 1	R
CO – 2	understand the structure, properties and fundamentals of biomolecules	PSO - 1	U
CO – 3	identify the characteristics and stages of mitosis, meiosis and cell cycle	PSO - 1	U
CO – 4	compare the beneficial effects of vitamin and mineral supplements in the diet	PSO - 2	An
CO – 5	learn the technique of Cell biology	PSO - 7	An

Allied Practical - I

Chemistry of Life

Sub. Code: BA20P1

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	identify electron micrographs of the cell organelles	PSO - 7	U
CO - 2	prepare root tip squash of onion to identify the various stages of mitosis	PSO - 3	E
CO - 3	know the importance of non -living inclusions in plant cells	PSO - 5	U
CO - 4	Know the effect of transpiration and photosynthesis	PSO - 7	An

Professional English (Add on Course)

Semester I

Course Code: ALS201

Course Outcomes

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO-1	Recognise the words used in life science and improve their competence in using the language	1	R
CO-2	Comprehend unfamiliar texts and describe biological processes	2	U
CO-3	Apply language for speaking and writing with confidence in an intelligible and acceptable manner	3	AP
CO-4	Apply critical and theoretical approaches to the reading and analysis of various texts in life sciences	3	AP
CO-4	Analyze critically, negotiate and present without committing errors and develop entrepreneurship skills.	4	An

Semester - I

Gardening and Floriculture (NMEC)

Sub. Code: BNM201

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
1	understand the importance of nursery management and gardening.	PSO - 5	Un
2	compare the different methods of vegetative propagation inorder to propagate ornamental and commercial flowers.	PSO- 1	Ev
3	analyze the different methods of weed control and harvest treatments of horticultural crops.	PSO- 4	An
4	design methods to grow a variety of garden plants in a diverse set of environment to become an entrepreneur.	PSO - 5	Ap

Semester - II
Plant Anatomy and Developmental Botany
Sub. Code: BC2021

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO - 1	recall the structure and functions of meristem, simple and complex tissues.	PSO - 1	R
CO - 2	differentiate primary and secondary structures.	PSO - 1	U
CO - 3	examine the nodal anatomy types.	PSO - 1	An
CO - 4	interpret the different types of endosperms.	PSO - 1	U
CO - 5	learn about double fertilization and their significance.	PSO - 1	U
CO - 6	understand the basic knowledge of apomixis and polyembryony in the field of crop improvement.	PSO - 1	Ev

Major Practical – I
Plant Anatomy and Developmental Botany
Sub. Code: BC20P1

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO – 1	observe and identify different types of tissues and stomata.	PSO - 3	U
CO – 2	prepare plant material for microscopic observation.	PSO - 7	C
CO – 3	draw appropriate anatomical diagrams from the sectioned plant material using microscope.	PSO - 3	An
CO – 4	differentiate and draw diagrams of nodes.	PSO - 3	An
CO – 5	observe and identify the slides of different stages of microsporogenesis.	PSO - 3	U
CO – 6	dissect and display the different stages of *Tridax* embryo.	PSO - 3	E

Semester - II
Taxonomy of Angiosperms and Herbal Technology
Sub. Code: BA2021

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO - 1	understand the basic knowledge of taxonomy by learning selected families of angiosperms.	PSO – 1	R
CO - 2	understand the characters of the families according to Bentham & Hooker's system of Classification.	PSO – 1	U
CO - 3	improve the awareness and appreciation of traditional medicinal practices.	PSO – 2	Ap
CO - 4	apply the basic medicinal plants and its utilization.	PSO – 7	An
CO - 5	create new strategies to enhance growth of medicinal herbs considering the practical issues pertinent to India.	PSO – 4	Cr
CO - 6	evaluate the drug adulteration through the biological testing.	PSO – 7	An

Semester - II

Allied Practical - I

Taxonomy of Angiosperms and Herbal Technology

Sub. Code: BA20P1

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	dissect and display the floral parts of the families studied and draw floral parts and write floral formula.	PSO - 1	An
CO - 2	assign the plant provided to the respective families.	PSO - 3	E
CO - 3	know the relevance of herbal drugs in Indian system of medicine.	PSO - 7	U
CO - 4	analyze the phytochemicals present in plant parts.	PSO - 7	An

Add on Course-Professional English for Life Sciences

Course Code: ALS202

Course Outcomes

CO	Upon completion of this course, the students will be able to:	PSO addressed	CL
CO-1	recognise the words used in life science and improve their competence in using the language.	1	R
CO-2	comprehend unfamiliar texts and describe biological processes.	2	U
CO-3	apply language for speaking and writing with confidence in an intelligible and acceptable manner.	3	Ap
CO-4	apply critical and theoretical approachesto the reading and analyses of various texts in life sciences.	3	Ap
CO-5	analyse critically, negotiate and present without committing errors and develop entrepreneurship skills	4	An

Biofertilizers, Biofuels and Biopesticides (NMEC)

Sub. Code: BNM202

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	design novel mechanisms for the sustainable utilization of natural resources.	PSO – 4	Ap
CO - 2	understand the role of microbes in bio - composting.	PSO – 3	An
CO - 3	utilize the technique studied for biofuel production using suitable production.	PSO -4	C
CO - 4	learn different skills in bioproduct processing to become an entrepreneur.	PSO – 5	Ap
CO - 5	know the efficacy of biocontrol mechanism over chemical application.	PSO – 4	U

Major Core III - Archegoniate
Course. Code: BC2031

Course Outcomes

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO – 1	describe the general characters of early land plants	PSO - 1	U
CO – 2	interpret the ecological and economic importance of archegoniate	PSO - 4	Ap
CO – 3	describe the external, internal structure and reproduction of archegoniate	PSO - 7	U
CO – 4	differentiate the life cycle patterns of archegoniate	PSO - 1	An
CO – 5	classify cryptogams and comment on the stelar evolution in pteridophytes	PSO - 1	U
CO – 6	compare the fossil members of pteridophytes and gymnosperms	PSO - 1	An

Major Practical Paper – II - Archegoniate
Sub Code: BC20P2

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO – 1	identify the archegoniate from their morphological features	PSO - 1	U
CO – 2	examine the internal anatomy of few bryophytes, pteridophytes and gymnosperms	PSO - 3	An
CO – 3	prepare plant material for microscopic observation	PSO - 3	An
CO – 4	gain knowledge on fossil plants	PSO - 7	U
CO – 5	identify the archegoniate plants through field visit	PSO - 1	R

Major Elective – I (a) Herbal Botany
Sub. Code: BC2032

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO – 1	develop skills to grow herbs and empower entrepreneurship	PSO – 5	C
CO – 2	compare the side effects of allopathic medicine with native medicine	PSO – 3	An
CO – 3	understand the different types of indigenous medicine	PSO – 2	An
CO – 4	incorporate the novel values of herbs as food supplement	PSO – 5	Ap
CO – 5	make aware of natural resources and the importance of conserving the same.	PSO – 4	U

CO – 6	demonstrate the use of locally available medicinal plants to the neighbourhood.	PSO – 7	U

Major Elective – I (b) Nursery and Gardening
Sub. Code: BC2033

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO – 1	incorporate lab to land programme by raising home garden and nurseries	PSO - 5	Ap
CO – 2	practice different techniques in propagating horticultural plants	PSO - 5	Ap
CO – 3	explain the different methods of vegetative propagation and hardening	PSO - 7	U
CO – 4	understand the types of garden and its operation	PSO - 3	U
CO – 5	explain the cultivation of different vegetables	PSO - 5	U

Major Elective – I (c) Agricultural Botany
Sub. Code: BC2034

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO – 1	understand the various factors influencing agricultural practices.	PSO - 1	U
CO – 2	integrate economic and ecological objectives into sustainable agricultural management strategies.	PSO - 3	An
CO – 3	gain knowledge on biological and technological aspects of seed production and certification.	PSO - 5	E
CO – 4	study the cultivation methods of cereals, millets, pulses and oil seeds.	PSO – 2	U
CO – 5	develop skills to improve agriculture by incorporating microorganisms.	PSO – 4	C

Allied II – Theory: Plant Diversity -I
Algae, Fungi, Bryophytes and Pteridophytes
Sub. Code: BA2031

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO - 1	categorize different groups of plants based on their morphological variation	PSO -1	R
CO - 2	study and impart knowledge about the reproduction and life cycle of given genera of algae, fungi, bryophytes and	PSO - 2	U

	pteridophytes.		
CO - 3	interpret the economic importance of algae, fungi, bryophytes and pteridophytes	PSO -1	Ap
CO-4	Compare the common characters shared by bryophytes and pteridophytes	PSO-2	An

Allied Practical – II
Algae, Fungi, Bryophytes and Pteridophytes
Sub. Code: BA20P2

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO – 1	practice the preparation of plant material for microscopic observation	PSO - 3	Ap
CO - 2	draw appropriate anatomical diagrams from the sectioning of plant material using microscope	PSO – 3	U
CO – 3	identify and distinguish the various reproductive bodies of bryophytes and gymnosperms prescribed in the syllabus using microscopic slides	PSO – 2	An

Course Outcomes

CO	Upon completion of this course, the students will be able to:	PSO addressed	CL
CO-1	define concepts related to communicative and digital competence.	1	R
CO-2	illustrate academic writing and creativity in digital media.	2	U
CO-3	apply communicative skills with digital competence in the workplace.	3	Ap
CO-4	analyse a variety of formats, including research papers, reflective writing and critical reviews of life sciences.	3	An
CO-5	analyse lectures, scripts, blogs, e-content and short films related to biology.	4	An

Major Core – IV Plant Ecology and Phytogeography
Sub. Code: BC2041

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO - 1	explicate the ecological interconnectedness between soil texture and water in plants	PSO - 2	U

CO - 2	compare the relationships between the different ecological groups	PSO - 1	An
CO - 3	relate formation of continents from the land mass	PSO – 6	An
CO - 4	create an awareness to safeguard endemic and native plants and for sustainable utilization of natural resources	PSO – 4	C
CO - 5	become employable in relevant areas related to ecology	PSO – 5	Ap

Major Practical Paper - II
Plant Ecology and Phytogeography
Sub Code: BC20P2

CO	**Upon completion of this course the students will be able to :**	**PSO addressed**	**CL**
CO - 1	record the locally available hydrophytes, xerophytes and halophytes	PSO - 1	R
CO - 2	construct a quadrat for vegetative analysis.	PSO - 4	Cr
CO - 3	demonstrate the measurement of soil permeability	PSO - 3	Ap
CO - 4	practice the preparation of plant material for microscopic observation	PSO - 5	Ap
CO - 5	distinguish the phytogeography models	PSO - 7	An

Major Elective – II (a) Biological Resources
Sub. Code: BC2042

CO	**Upon completion of this course the students will be able to:**	**PSO addressed**	**CL**
CO – 1	understand the basic concepts renewable energy	PSO - 3	U
CO – 2	know the nutritive value of Single Cell Protein and learn the techniques of producing them	PSO - 2	U
CO – 3	recognize the need to protect and conserve Mother Nature	PSO - 4	An
CO – 4	find ways to have sustainable management of natural resources	PSO - 4	E
CO – 5	gain awareness of career options in the field of biological resources	PSO - 5	C

Elective - II (b) Food Science
Sub. Code: BC2043

CO	**Upon completion of this course the students will be able to:**	**PSO addressed**	**CL**

CO – 1	list the different constitutes of food, methods of cooking and preservation	PSO - 5	R
CO – 2	realize the side effects of food additives	PSO - 3	U
CO – 3	prepare value - added products	PSO - 5	C
CO – 4	explain the industrial production of beer, ethyl alcohol, vinegar and amylase	PSO - 5	U
CO – 5	design balanced diet	PSO - 2	C
CO – 6	test for detection of food adulterants and colourants	PSO - 3	E

Elective – II (c) Biodiversity and Human Welfare
Sub. Code: BC2044

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO – 1	record the biodiversity oftaxa at different region	PSO – 4	R
CO – 2	organize biodiversity awareness programmes	PSO – 7	C
CO – 3	engage with GO or NGO on the conservation of biodiversity	PSO - 4	Ap
CO – 4	assess the value of biodiversity through valid methodologies	PSO - 7	E
CO – 5	categorize the hot spots of biodiversity in national level	PSO - 6	An

Allied II- Theory
Plant Diversity – II (Gymnosperms, Angiosperms) and Plant Physiology
Subject Code: BA2041

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO – 1	know about the unique characters andeconomic importance of gymnosperms	PSO – **1**	U
CO – 2	understand the plant morphology and basic taxonomy	PSO – **2**	U
CO – 3	know the floral variations seen in the selected families	PSO – **1**	R
CO –4	relate complementary metabolic pathways such as photosynthesis and respiration in energy acquisition	PSO – **3**	An
CO –5	identify the major effects and physiological mechanisms of growth regulators in plants	PSO - **2**	E

Allied Practical – II
Plant Diversity – II (Gymnosperms, Angiosperms) and Plant Physiology
Subject Code: BA20P2

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO – 1	prepare plant material for microscopic observation.	PSO – 7	C

CO-2	draw appropriate anatomical diagrams from the sectioned plant material using microscope.	PSO – 3	An
CO –3	dissect and display the floral parts of the families studied and draw floral parts and write floral formula.	PSO – 1	An
CO –4	assign the given plant to its family giving reasons	PSO – 3	E
CO – 5	observe principal metabolic events in plants	PSO - 3	U

Add on Course-Professional English for Life Sciences
Course Code: ALS204

Course Outcomes

CO	Upon completion of this course, the students will be able to:	PSO addressed	CL
CO-1	define concepts related to communicative and digital competence.	1	R
CO-2	illustrate academic writing and creativity in digital media.	2	U
CO-3	apply communicative skills with digital competence in the workplace.	3	Ap
CO-4	analyse a variety of formats, including research papers, reflective writing and critical reviews of life sciences.	3	An
CO-5	analyse lectures, scripts, blogs, e-content and short films related to biology.	4	An

B.Sc. Programme Outcome (PO)

PO No.	Upon completion of B.Sc. Degree Programme, the graduates will be able to :
PO - 1	apply the acquired scientific knowledge to face day to day needs.
PO - 2	create innovative ideas through laboratory experiments.
PO - 3	carry out field works and projects independently and in collaboration with other institutions and industries
PO - 4	reflect upon green initiatives and take responsible steps to build a sustainable environment.
PO - 5	face challenging competitive examinations that offer rewarding careers in science and education.
PO - 6	impart communicative skills and ethical values.
PO - 7	equip students with hands on training through various courses to enhance entrepreneurship skills.

Programme Specific Outcomes (PSO)

PSOs No.	Upon completion of B.Sc. Degree Programme, the graduates of Botany will be able to :	PO Addressed
PSO - 1	Develop a strong and competent knowledge in Botany	PO - 1
PSO - 2	Apply the contextual knowledge in Botany to	PO - 7

	improve the supply of medicines, food, fibers and other plant products to the society.	
PSO - 3	Understand the basic professional skills through various laboratory technical training, to analyze the relevant biological situations	PO - 2
PSO - 4	Create green environment to protect nature for future sustenance	PO - 4
PSO - 5	Seek entrepreneurship through skill based, value added and related courses	PO - 7
PSO - 6	Communicate appropriately and effectively in science and also interact productively with people from diverse background	PO - 5
PSO - 7	Utilize the scientific explanation for the unity and diversity of life on earth	PO - 4
PSO - 8	Understand the professional, ethical, legal and social issues related to gender	PO - 6
PSO - 9	Integrate the related topics from other branches of science to carry out projects to have a successful career.	PO - 3

Semester - V

Major Core-V Taxonomy and Economic Botany

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO - 1	relate the modifications in plant parts	PSO - 7	U
CO - 2	differentiate the artificial, natural and phylogenetic classification and learn about ICN rules	PSO - 1	An
CO - 3	evaluate the taxonomists of India	PSO - 1	Ev
CO - 4	Recall the characters of some important families	PSO - 6	R
CO - 5	understand the economic importance of plants and their use at various levels	PSO - 1	U
CO - 6	construct digital herbarium and learn about Herbarium techniques	PSO - 5	C

Major – Core VI -Biochemistry and Biophysics

Sub. Code: BC1752

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	identify the levels of structure in proteins and describe its biological roles	PSO - 3	R
CO - 2	understand the structure, properties and fundamentals of biomolecules	PSO - 3	U

CO - 3	demonstrate thermodynamic principles in biological energy conversion	PSO - 4	Ap
CO - 4	analyze enzyme activity	PSO - 9	An
CO - 5	compare the structure of saturated fatty acids with unsaturated fatty acids	PSO - 9	E
CO - 6	analyse the biological data and interpret data with the hypothesis	PSO - 3	An

Major Core – VII – Microbiology and Plant Pathology
Sub. Code: BC1753

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	be familiarize with basic information about microbiology and microbiologists	PSO - 1	U
CO - 2	explore the role and relevance of viruses and bacteria in the field of microbiology	PSO - 4	Ap
CO - 3	work safely, competently and effectively in the laboratory in a team.	PSO - 9	An
CO - 4	undertake careers in microbiology through the hands – ontraining techniques they learnt	PSO - 3	C
CO - 5	recognize the signs and symptoms of diseases and the major issues that arise due to such infections	PSO - 7	U

Major- Elective- III (a)Horticulture and Plant Breeding

Sub. Code: BC1754

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	understand the scope of horticulture	PSO - 1	U
CO - 2	develop creative skills for establishment of an orchard	PSO - 5	C
CO - 3	explain the propagation methods by seeds, cuttings, grafting, budding and layering	PSO - 5	U
CO - 4	apply the knowledge of horticultural techniques to develop ornamental gardens	PSO - 5	Ap
CO - 5	recall the special techniques in plant breeding	PSO - 3	R
CO - 6	analyze the employability skills in the field of horticulture	PSO - 5	An

Major- Elective- III (b)Forestry

Sub. Code: BC1755

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	list the different agroforestry technologies and identify ways to classify them into relevant groups	PSO - 4	R
CO - 2	review the types and distribution of forest with reference to India	PSO - 4	U
CO - 3	apply forest management principles and practice them inland management	PSO - 4	Ap
CO - 4	analyze recreational forestry including Botanical gardens, Zoos, National Parks and Sanctuaries in recreation/conservation of wildlife	PSO - 5	An
CO - 5	recognize the valuable forest products and the methods of conservation	PSO - 4	U
CO - 6	report the possible man - made calamities of the forest	PSO - 8	U

Major Elective- III (c) Biological techniques

Sub. Code: BC1756

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	understand the basic units of measurement	PSO - 1	U

CO - 2	determine the basic principles and applications of instrument used in biology	PSO - 6	U
CO - 3	practice and employ in the field of biological techniques	PSO - 9	Ap
CO - 4	demonstrate use the techniques, skills, tools necessary for practice	PSO - 3	Ap
CO - 5	discuss the structure and functions of biological techniques	PSO - 6	U
CO - 6	operate the biological techniques properly, work safely, competently and effectively in the laboratory in a team	PSO - 9	Ap

1. Edward Chee Tak Yeung, Claudio Stasolla, Michael John Sumner and Bing Quan Huang (2015). *Plant Microtechniques and Protocols*. Switzerland: Springer International Publishing.

7. Gurumani, N. (2006). *Research Methodology: For Biological Sciences.* Chennai:MJP Publishers.

Major Practical - V
Taxonomy and Economic Botany and Biochemistry and Biophysics
Sub Code: BC17P5

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	identify the plant parts from commonly available plants	PSO - 1	R
CO - 2	identify the family and describe the plant parts and floral parts	PSO - 6	U
CO - 3	record the economically important products from the prescribed families in the syllabus	PSO - 2	Ap
CO - 4	estimation, titration, separation and separation of biomolecules	PSO - 3	E
CO - 5	identify spotters (i.e. Photos/Models/Instruments)	PSO - 6	Ap
CO - 6	demonstrate the qualitative and quantitative analysis of Glucose, Starch, Protein and Lipids	PSO - 3	Ap

Major Practical - VI

Microbiology and Plant Pathology

Sub Code: BC17P6

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	identify the disease causing microbes	PSO - 1	U
CO - 2	apply sterilization technique and prepare sterile bacterial culture media	PSO - 3	Ap
CO - 3	detect Coliform bacteria in water samples	PSO - 3	An
CO - 4	identify the spotters	PSO - 1	Ap
CO - 5	arrange a visit to dairy form and know the importance	PSO - 3	Cr

	of pasteurization		

Skill Based Course

Floriculture

Sub. Code:BSK175

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO – 1	cnderstand the importance of the features of garden	PSO - 4	R
CO – 2	apply the acquired knowledge and practical skill in developing ornamental garden	PSO - 5	Ap
CO – 3	understand the process of plant growth	PSO - 1	R
CO – 4	recall the methods of harvesting, packing and marketing of cut flowers	PSO - 5	R
CO – 5	create aesthetic arrangement of dry flower decoration	PSO - 5	C
CO – 6	prepare the students for a job in plant nursery or commercial grower or floral whole sale	PSO - 5	C

Major Core VIII - Genetics, Biostatistics and Bioinformatics
Sub. Code: BC1761

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO – 1	apply Mendelian principle and predict genetic inheritance patterns	PSO - 6	U
CO – 2	analyze the scientific evidence for the origin of life	PSO - 7	Ap
CO – 3	get an insight of chromosome abnormalities and related human syndromes	PSO - 3	U
CO – 4	generate biological interpretations and conclusions from data of scientific research	PSO - 9	C
CO – 5	develop skills to become employable as professionals in Biochemical Industries	PSO - 5	C

Major Core IX- Biotechnology and Molecular Biology

Sub. Code: BC1762

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO – 1	acquaint with the fundamental principles of biotechnology	PSO - 1	U
CO – 2	familiarize with the laboratory requirements for plant tissue culture	PSO - 3	Ap
CO – 3	understandthe impact of technology upon society and utilizingwith social conscience	PSO - 8	U

CO – 4	explain the mechanisms of genetic information	PSO - 8	An
CO – 5	apply the skill of Biotechnological concepts, to solve problems related to Biotechnology	PSO - 2	Ap
CO – 6	become employable in Biotech laboratories	PSO - 5	C

Major Core X- Plant Physiology and Metabolism

Sub. Code: BC1763

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO – 1	correlate Plant - water relations with special emphasis on osmosis, transpiration and water potential	PSO - 1	An
CO – 2	know the interrelationships among plants and micro - organisms in nitrogen fixation	PSO - 4	U
CO – 3	use simple laboratory skills in scientific measurements	PSO - 3	Ap
CO – 4	assess how plants respond and adapt to the environment	PSO - 4	E
CO – 5	relate complementary metabolic pathways such as photosynthesis and respiration in energy acquisition	PSO - 6	An
CO – 6	understand the major effects and physiological mechanisms of growth regulators in plants	PSO - 7	U

Elective –IV (a) Marine Botany

Sub. Code: BC1764

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO – 1	describe the relationship between organisms and environment	PSO - 4	U
CO – 2	compare the threats and conservation of seaweeds and sea grasses	PSO - 4	An
CO – 3	evaluate how natural events and human activities affect coastal habitats	PSO - 1	E
CO – 4	create a broad knowledge about the economic importance marine biodiversity	PSO - 7	C
CO – 5	recognize the marine pollution and conservation methods	PSO - 9	U
CO – 6	describe the classification of marine habitat	PSO - 6	U

Elective –IV (b) Organic Farming

Sub. Code: BC1765

CO	Upon completion of this course the students will be able to:	PSO addressed	CL
CO – 1	understand the legacy of organic farming	PSO - 8	U

CO – 2	apply the knowledge on organic pest management	PSO - 1	Ap
CO – 3	analyze different sources of organic manures	PSO - 3	An
CO - 4	recall different types of farming and its benefits	PSO - 5	R
CO - 5	evaluate the land for organic farming	PSO - 5	E
CO - 6	create an awareness on organic farming and its certification	PSO - 2	C

Major Elective I

Elective –IV (c) Ecotourism

Sub. Code: BC1766

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO – 1	recognize that tourism has on naturally beautiful environments	PSO - 4	R
CO – 2	explain that tourism does not exploit the natural environment or local communities.	PSO - 4	U
CO – 3	create environmental and cultural awareness and respect	PSO - 7	C
CO – 4	understand the type of tourism	PSO - 1	U
CO – 5	apply the environment as well as cultural matters in eco tourism	PSO - 3	Ap
CO – 6	evaluate research in tourism environment related areas	PSO - 4	E

Major Practical - V

Taxonomy and Economic Botany

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Biochemistry and Biophysics

Sub Code: BC17P5

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	identify the plant parts from commonly available plants	PSO - 1	R
CO - 2	identify the family and describe the plant parts and floral parts	PSO - 6	U
CO - 3	record the economically important products from the prescribed families in the syllabus	PSO - 2	Ap
CO - 4	estimation, titration and separation of biomolecules	PSO - 3	E
CO - 5	identify spotters (i.e. Photos/Models/Instruments)	PSO - 6	Ap
CO - 6	demonstrate the qualitative and quantitative analysis of Glucose, Starch, Protein and Lipids	PSO - 3	Ap

Major Practical -VI

Genetics, Biostatisticsand Bioinformatics

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Biotechnology and Molecular Biology

Sub Code: BC17P6

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	identify the different stages of mitosis from the root tip squash of onion	PSO - 3	R
CO - 2	demonstrate experiments and interpret experimental data using biostatics	PSO - 3	U
CO - 3	identify spotters (i.e. Photos/Models/Instruments)	PSO - 1	Ap
CO - 4	solve genetic problems	PSO - 8	E
CO - 5	understand the sterilization technique and preparation of MS medium	PSO - 5	Cr
CO - 6	find out the biostatistics calculations from given data	PSO - 3	U

Major Practical -VII

Microbiology and Plant Pathology

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Plant Physiology and Metabolism

Sub Code: BC17P7

CO	Upon completion of this course the students will be able to :	PSO addressed	CL
CO - 1	demonstrate and interpret the results to physiology experiments	PSO - 7	R
CO - 2	identify the disease causing microbes	PSO - 1	U
CO - 3	apply sterilization technique and prepare sterile bacterial culture media	PSO - 3	Ap
CO - 4	detect Coliform bacteria in water samples	PSO - 3	An
CO - 5	identify the spotters	PSO - 1	Ap
CO - 6	know the importance of pasteurization through field visit	PSO - 3	U