

Semester – I				
Course Code: 22BZO1C1	Core Course - I Invertebrata– I	T/P T	C 5	H/W 5
Objectives	<ul style="list-style-type: none"> ➤ To understand the taxonomy, relationship and evolution of animals. ➤ To identify the animals of invertebrate phyla and to recognize their distinguishing features. ➤ To appraise the diversity of animals in a phylogenetic context. ➤ To understand how different body designs solve biological problems related to physiological and environmental challenges. ➤ To develop an appreciation for the role of invertebrates in biological communities, ecological interactions, and conservation problems 			
Outcomes	<ul style="list-style-type: none"> ➤ The learner will be able to understand the diversity and basic taxonomy of Non chordates. ➤ The learner will get an idea of adaptation and importance of non-chordates. ➤ The learner will be able to identify the animal at basic level. ➤ The paper will give a strong observation skill and prompt him to think about its conservation, sustainable economic utilization and its potentials in technological prospects. 			

SEMESTER–I				
Course Code: 22BZO1P1	Core Practical – I INVERTEBRATA– I&II	T/P P	C 4	H/W 4
SECTION-A Dissection:	Earthworm: <ul style="list-style-type: none"> ▪ Digestive system ▪ Nervous system (Earthworm should be cultured in the department with the help of students and specimen for the practical should be collected from the culture tray) Pila: <ul style="list-style-type: none"> ▪ Digestive system Cockroach: Demo only <ul style="list-style-type: none"> ▪ Digestive system ▪ Nervous system ▪ Male and female reproductive system 			
SECTION-B Mountings	<ul style="list-style-type: none"> ▪ Cockroach mouth parts ▪ Prawn-appendages, ▪ House fly Mouth parts ▪ Earthworm Body setae and Penial Setae 			
SECTION-C Museum specimens/ slides/models and charts	<ul style="list-style-type: none"> ▪ <i>Ameoba, Paramecium, Noctiluca, Plasmodium, Leucosolenia, Obelia</i> colony, <i>Madreporite, Fasciola, Ascaris</i> – male and female, Neries, Prawn, Nauplius, Zoea, Mysis larva, Pila, Octopus, Pearl oyster, Star fish, Bipinnarialarva. 			
SECTION-D	<ul style="list-style-type: none"> ▪ Preservation of insectpests 			
SECTION-E	<ul style="list-style-type: none"> ▪ Bonafide Record of the work done in laboratory must be submitted while attending the examination. 			

Semester – I					
Course Code: 22BZO2C1	Core Course - II		T/P	C	H/W
	Chordata		T	5	5
Objectives	<ul style="list-style-type: none"> ➤ The paper will give a strong observation skill and prompt him to think about its conservation, sustainable economic utilisation and its potentials in technological prospects. ➤ To understand the taxonomy, relationship and evolution of animals. ➤ To identify the classes of vertebrate animals and recognize their distinguishing features. ➤ To appraise the diversity of animals in a phylogenetic context. ➤ To understand how different body designs solve biological problems related to physiological and environmental challenges. ➤ To develop an appreciation for the role of vertebrates in biological communities, ecological interactions, and conservation problems 				
Outcomes	<ul style="list-style-type: none"> ➤ The learner will be able to understand the diversity and basic taxonomy of chordates. ➤ The learner will get an idea of adaptation and the importance of chordates. ➤ The learner will be able to identify any vertebrate animal at basic level. 				

SEMESTER – II					
Course code: 22BZO2P1	Core Practical CHORDATA		T/P	C	H/W
			P	4	4
SECTION-A Dissection/experiment/ analysis	<ul style="list-style-type: none"> ▪ Digestive system of any commercial fish 				
SECTION-B Mountings	<ul style="list-style-type: none"> ▪ Scoliodon: Placoid scales 				
SECTION-C Museum specimens/ slides/models and charts	<ul style="list-style-type: none"> ▪ Balanoglossus Tornaria larva, Ascidian Amphioxus, Petromyzon, Shark, Narcine, Sucker fish, Hippocampus, Bufo, Rhacoporus, Chamaeleon, any two venomous and non-venomous snakes, Drago, Pigeon, Kingfisher, bat, Ant eater. 				
SECTION-D	Identify and comment on the specimens given below Pigeon – Synsacrum, Rabbit: skull, Girdles, Vertebrae (atlas, cervical and sacral), fore limb and hind limb skeleton.				
SECTION-E	<ul style="list-style-type: none"> ▪ Choose any commercial fish/amphibian/reptile/bird/mammal and do a project work on their generic identification, description and illustration with a note on its importance 				
SECTION-F	<ul style="list-style-type: none"> ▪ Bonafide Record of the work done in laboratory must be submitted while attending the examination. 				

Semester – III					
Course Code: 22BZO3C1	Core Course - III		T/P	C	H/W
	CELLBIOLOGY AND BIOCHEMISTRY		T	3	4
Objectives	<ul style="list-style-type: none"> ➤ To give an insight to the ultra-structure of cellular components. ➤ To give an idea about the biochemistry major nutrients and enzyme actions. ➤ To give a clear idea about how the basic metabolism occur inside the cell. 				

Outcomes	<ul style="list-style-type: none"> ➤ Students can understand the structures and purposes of basic components of cells, especially biomolecules, membranes, and organelles. ➤ Students will develop an idea how cellular components are used to generate and utilize energy in cells. ➤ Students will explain the cellular components underlying mitotic cell division. ➤ Students will be able to apply their knowledge of cell biology to selected examples of changes or losses in cell function. ➤ These can include responses to environmental or physiological changes, or alterations of cell function brought about by mutation. ➤ Students will understand the basics of biochemistry of food and its metabolism.
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Semester– III				
Course code: 22BZO3C2	CORE COURSE-IV DEVELOPMENTAL BIOLOGY & EVOLUTION	T/P	C	H/W
		T	4	4
Objectives	<ul style="list-style-type: none"> ➤ To make an awareness to the students about the theories, concepts and basics of Developmental Biology. ➤ To provide students about the idea of sex cells, fertilization, cleavage, differentiation and development of organs. ➤ To make an awareness of the induction, organizers and development of extra embryonic structures. ➤ To provide adequate explanation to students about the late embryonic developments and post embryonic development and ageing. ➤ To develop an idea of the animal adaptations and its significance in relation to evolution. ➤ To develop an idea of the distribution of the various faunal components. ➤ To develop an idea regarding the evolution of various vertebrate forms 			
Outcomes	<ul style="list-style-type: none"> ➤ The learner will be able to understand methodological approaches to the study of embryonic development and the characteristics of the principal experimental models. ➤ The learner will be able to understand the derivatives of embryonic structures. ➤ The students will be able to explain the clinical implications of development and the mechanisms that intervene in developmental alterations. ➤ Students will be able to the mechanisms by which evolution occurs. ➤ Students will be able to understand how new species occur and reasons for species extinction. ➤ Students will have an insight on how major vertebrate forms and humans are evolved in the earth. 			

SEMESTER – III				
Course code 22BZO3P1	PRACTICAL III CELL BIOLOGY, BIOCHEMISTRY, DEVELOPMENTAL BIOLOGY & EVOLUTION	T/P	C	H/W
		P	3	3
SECTION-A Dissection/experiment/analysis	<ul style="list-style-type: none"> ▪ Action of salivary amylase of man in relation to the temperature variation ▪ Mounting of Mitotic stages in the onion root tip ▪ Mounting of Meiotic stages from the testis of grasshopper. ▪ Mount any one of the chick embryo and comment on it 18Hours, 24Hours, 48Hours, 72hours and 96 Hours. 			
SECTION-B Mountings/ Analysis	<ul style="list-style-type: none"> • Determination of Rf values of amino acid – Paper Chromatography: <ul style="list-style-type: none"> ▪ Mounting of Giant Chromosomes in Chironomous larva ▪ Mounting of Squamous epithelial cells from the oral mucosa ▪ Mounting of Blood cells / Haemin crystals 			
SECTION-C Museum specimens/ slides/models and charts	<ul style="list-style-type: none"> • Nucleus, Mitochondria, Endoplasmic Reticulum, Golgi Apparatus, Ribosomes, Nucleus, Mitochondria, Endoplasmic Reticulum, Golgi Apparatus, Ribosomes, Cleavage, Blastula, Placenta of Mammals – Pig, sheep, Man & Rabbit. Fossils: Trilobite, Nautilus. Animals of evolutionary importance:, Archaeopteryx, Darwin’s finches, Mimicry: Leaf insects, Stick insects, Monarch and Viceroy butterfly, Adaptive colouration: Chamaeleon, Lycodon. 			

SECTION-D	<ul style="list-style-type: none"> Identify and comment on 18, 24-, 33-, 48- & 72-hours chick embryo. / Cleavage, Blastula, Gastrula stages of Frog/ Living fossil Limulus and Peripatus.
SECTION-E	<ul style="list-style-type: none"> Find out the presence or absence of carbohydrates/ protein/lipid/nitrogenous waste products in the given sample
SECTION-F	<ul style="list-style-type: none"> Bonafide Record of the work done in laboratory must be submitted while attending the examination.

Semester-IV				
Course code: 22BZO4C1	CORECOURSE-V	T/P	C	H/W
	GENETICS & MOLECULAR BIOLOGY	T	4	4
Objectives	<ul style="list-style-type: none"> Students will learn the basic principles of inheritance at the molecular, cellular and organismal levels. Students will understand causal relationships between molecule/cell level phenomena ("modern" genetics) and organism-level patterns of heredity ("classical" genetics). Students will learn the mechanism of Mutation and will be able to understand how mutations bring changes in an organism. 			
Outcomes	<ul style="list-style-type: none"> Students will be able to describe and apply the principles of Mendelian genetics. Students will be able to describe the flow of genetic information from DNA to RNA to protein. Students will be able to explain how genes are regulated. The students will be able to explain how mutation occurs and its role in adaptation and speciation. 			

Semester-IV				
Course code: 22BZOC2	Core Course-VI	T/P	C	H/W
	ECONOMIC ZOOLOGY	T	4	4
Objectives	<ul style="list-style-type: none"> The course is intended to make an awareness of the students about the economic importance of various animals The course will give an insight on to how to commercialize animal based products. The course will create awareness on the basics of animal husbandry based self employment. The course motivates the students to explore the opportunities to commercialize animal based products. The course will create awareness on waste recycling, waste utilization, conversion of waste into wealth. 			
Outcomes	<ul style="list-style-type: none"> Students can start animal based small scale industry Students will get self-employment through animal-based income generation. Students will learn to start location specific animal rearing and income generation units. Students will start small business based on waste to wealth The natural manure produced will help to improve soil fertility and help to minimize chemical fertilizers in agriculture. The efforts to start small animal based business will give employment to local people 			

SEMESTER – IV					
Course code: 22BZO4P1	PRACTICAL IV		T/P	C	H/W
	GENETICS, MOLECULAR BIOLOGY AND ECONOMIC ZOOLOGY		P	3	3
SECTION-A Experiment/analysis	<ul style="list-style-type: none"> ▪ Experiments to study Mendel’s law using beads. ▪ Observation of minimum 10 Mendelian characters for self & class Students 				
SECTION-B Mountings/Demonstration/Observation	<ul style="list-style-type: none"> ▪ Preparation of Pedigree chart for any two known visible characters for self. ▪ Demonstration of inactive X-chromosome in buccal epithelial cells of human female ▪ Study of phenotypic characters of Drosophila ▪ Mounting of mouth parts of Silk worm. ▪ Honey bee mouth parts ▪ Sting apparatus of Honey Bee ▪ Silk gland Mounting 				
SECTION-C Museum specimens/slides/models and charts	<ul style="list-style-type: none"> ▪ Spotters : Drosophila, Cis-Trans linkage types, Gynandromorph, Syndromes –Down, Turner, Klinefelter & Cri-du-Chart, Bacteriophage, E.coli., DNA, Feeders, Waterers and drinkers of different types. Identification of eggs, pupa, cocoon and male and female adults, defective cocoons of silk worm. Identification of Mulberry and Non-Mulberry Silk worms. Identification of earthworm cocoons and vermi casts. 				
SECTION-D	<ul style="list-style-type: none"> ▪ Identify and comment on Breeds of poultry (photographs)/ Parasites of poultry (Tics, mites, lice, ascaris worm)/ Identification of commercially important fishes Tilapia, Channa punctatus, Mystus vitatus, Lepidocephalus thermalis, Common carp, Grass carp, Silver carp. 				
SECTION-E	<ul style="list-style-type: none"> ▪ Visit any one of the Sericulture/ Fish culture /Vermiculture/Poultry Science units and submit a field study report 				
	<ul style="list-style-type: none"> ▪ Bonafide Record of the work done in laboratory must be submitted while attending the examination. 				

Semester– V					
Course code: 22ZO5C1	CORE COURSE-VII		T/P	C	H/W
	MICROBIOLOGY AND IMMUNOLOGY		T	4	4
Objectives	<ul style="list-style-type: none"> ➤ The course is intended to make an awareness of the students about the classification, diversity, organization, application and pathogenicity of the microorganisms existing the ecosystem. ➤ The course will help the students to learn about the various microbial culture techniques and its handling. ➤ The course will give an idea that how microbes are used in various industries for generation of various products related to day-to-day life. ➤ The course will give an insight to the cellular components involved in the immunity. ➤ The course will give an awareness of the mechanism, types and concepts regarding immune response. 				
Outcomes	<ul style="list-style-type: none"> ➤ The students will be able to explain the taxonomy, diversity and general structure of micro-organisms. ➤ They will develop knowledge about the culture, sterilization, handling, identification and assessing growth characters of microorganisms. The students will develop knowledge about the general microbial techniques for isolation of pure cultures of bacteria, fungi and algae and will master the aseptic techniques to perform routine culture handling tasks safely and effectively. ➤ The students will get idea about the microbial spoilage and the potentials in the 				

	<p>usage of microbes in agriculture.</p> <ul style="list-style-type: none"> ➤ The students will develop an awareness about the various microbial diseases and the causative organisms. ➤ The students will be able to develop an idea about the cellular and molecular basis of immune response. ➤ The students will be able to understand the principles of self-tolerance and autoimmunity and will be able to relate the potentials of immunology in relation biotechnology and applied sciences.
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Course code: 22BZO5C2	CORECOURSE-VIII			T/P	C	H/W
	ANIMAL PHYSIOLOGY			T	4	4
Objectives	<ul style="list-style-type: none"> ➤ To familiarize students with the principles and basic facts of Animal Physiology. ➤ To give students an insight about the molecular and cellular basis of physiological functions in animals. ➤ To give an idea about the regulation of organ system functions in a whole animal using a conceptual model of feedback to explain homeostasis. ➤ To make an awareness to the students about how the structure-function relationships synchronize along with the molecular signals. 					
Outcomes	<ul style="list-style-type: none"> ➤ The students will be able to explain how the various organ systems are coordinated and controlled. ➤ The students will be able to list the functions of various organs in relation to physiological process ➤ The students will develop the idea of multilevel controlling and feedback mechanism in relation to various physiological functions. ➤ The students will be able to understand the basic physiological process related to adaptation, metabolism and major requirements 					

Semester-V						
Course code: 22BZO5 C3	CORECOURSE-IX			T/P	C	H/W
	ECOLOGY AND BIO-STATISTICS			T	4	4
Objectives	<ul style="list-style-type: none"> ➤ To develop awareness about the environment and its interaction with living system. ➤ To understand about various habitat ecosystems. ➤ To create an awareness about the biodiversity and need for its conservation. ➤ To develop professional who can have a critical approach to the evaluation of their own and other research work through statistical methods. 					
Outcomes	<ul style="list-style-type: none"> ➤ The students will be able to present an overview of diversity of life forms in an ecosystem, will be able to differ between Qualitative & Quantitative study. The learner can correlate choice of habitat for organisms to Abiotic Factors, aspects of energy transfer and will be able to explain the necessity for and adaptations, providing examples. ➤ The learner can understand the reasons and capable of managing pollution and after effects. ➤ The learner will be able to understand the value & need of Biodiversity conservation ➤ Understand human impacts to ecosystem describe and discuss basic statistical concept assess the distribution characteristics of variable. Formulate and test hypothesis. 					

Coursecode: 22BZO5C4		CORECOURSE- X BIOTECHNOLOGY	T/P	C	H/W
			T	4	4
Objectives	<ul style="list-style-type: none"> ➤ The objective of this course is to give a firm foundation in the fundamentals of modern Molecular techniques. ➤ The course will give an insight to the mechanism of Gene Expression and Regulation. ➤ The course will give a nut shell idea of various protocols followed in Biotechnology in relation to animal science. 				
Outcomes	<ul style="list-style-type: none"> ➤ The course will give an idea about the various techniques used in modern biotechnology. ➤ The course will give an insight to the current applications of biotechnology and advances in the different areas like medical, microbial, environmental, bioremediation, agricultural, animal and forensics. ➤ The learner will be able to understand how microbes is used engineer various genes. ➤ The students will be able to explain the general principles of generating genetically modified organisms and modern artificial methods in biotechnology 				

SEMESTER – V					
Course code 22BZO5PI		Core Practical V MICROBIOLOGY, IMMUNOLOGY AND ANIMAL PHYSIOLOGY	T/P	C	H/W
			P	4	6
SECTION-A Dissection/expe riment/analysis	Agglutination test to show antigen-antibody reaction. Oxygen consumption of fishes under different situations Isolation of Microorganism-Demo				
SECTION-B Mountings	Hanging drop experiment for observation of live Bacteria from given sample Using B.P. Apparatus, find out the blood pressure of your classmates Qualitative analysis of excretory products (ammonia, urea and uric acid) Preparation of haem in crystals Prepare thin film of blood and observe blood cells				
SECTION-C Museum specimens/ slides/models and charts	Study of permanent histological sections of mammalian pituitary, thyroid, pancreas, adrenal gland, testis and ovary .Air breathing fishes and accessory respiratory organs. Mammalian heart, kidney, brain /ECG/ Haemoglobinometer/ Haemocytometer/ Sphygmomanometer/Kymograph/				
SECTION-D	Identify and comment on the slides/specimen of Primary and Secondary Lymphoid organs: Thymus b. Bone marrow c. Spleen d. Lymph node E. Bursa of fabrics.				
SECTION-E	<ul style="list-style-type: none"> ▪ Bonafide Record of the work done in laboratory must be submitted while attending the examination. Identify and comment on the 				

SEMESTER –IV						
Course code: 22BZO5P2	Core Practical VI			T/P	C	H/W
	ECOLOGY, BIO-STATISTICS & BIOTECHNOLOGY			P	4	6
	SECTION-A Dissection/experiment/analysis	<ol style="list-style-type: none"> 1. Estimation of dissolved Oxygen of river, pond and sewage water 2. Estimation of Salinity 3. Estimation of Calcium. 4. Collection and identification of plankton in a pond 5. Calculation of Mean, Medium, Mode, Standard deviation and Standard Error. 6. Chi-square test and testing hypothesis using coin method 7. Techniques of sterilization using autoclave/pressure cooker 8. Blotting techniques – observation of photograph 9. Extraction of DNA from samples – Demonstration Only 				
SECTION-B Mountings	<ul style="list-style-type: none"> ▪ Analysis of fresh water and marine plankton and mounting of plankton. 					
SECTION-C Museum specimens/slides/models and charts	Laboratory specimens related to animal associations: symbiosis, mutualism, commensalism, parasitism and predation. Mimicry and colouration: Leaf insect, stick insect, Chameleon. 5 freshwater Zoo planktons and 5 marine zooplanktons. Statistics: Pie chart, Histogram, Bar diagram, Multiple bar diagram, Component bar diagram, Percentage bar diagram, Cartogram, Pictogram. Biotechnology: Spirulina, Mushroom seed, Penicillin, Yeast, Autoclave, Pressure cooker, Culture Media.					
SECTION-D	<ul style="list-style-type: none"> • Comment on S e c c h i d i s c / Pond Ecosystem/ Ecological Succession • Construct a food web/ energy pyramid/ pyramid of biomass/ and inverted pyramid from the sample pictures given. 					
SECTION-E	<ul style="list-style-type: none"> • Internal: Visit a nearby biotechnology laboratory and submit report of what are the instruments/ techniques they use in their lab. • External: Field visit to expose the students to o b s e r v e various ecological habitats and its animal adaptations: Forest/Mountain/Seashore/Lake /River/etc.and to pollution affected areas to study the impact on environment and ecosystem(Compulsory) 					
SECTION-F	<ul style="list-style-type: none"> • Bonafide Record of the work done in laboratory must be submitted while attending the examination. 					
Semester–VI						
Course code: 22BZO6E1	DSE			T/P	C	H/W
	FISHERIES BIOLOGY			T	6	6
Objectives	<ul style="list-style-type: none"> ➤ To provide the students about necessary basic information regarding fishery and aquaculture. ➤ To improve the technical and general knowledge necessary for competent fisheries management ➤ To discuss important factors for performing a sustainable fishery and sustainable aquaculture. 					
Outcomes	<ul style="list-style-type: none"> ➤ Students will learn about the role of fisheries management. ➤ Students will learn about fresh water and marine water fish species ➤ Students able to understand about prawn culture and molluscan culture. 					

Semester VI					
Course code: 22BZO6E2	DSE		T/P	C	H/W
	VERMICULTURE		T	6	6
Objectives	<ul style="list-style-type: none"> ➤ To study about the earthworms ➤ To learn the skills of vermiculture and vermicomposting methods ➤ To teach about the eco-friendly technology ➤ To generate employment after completion of the Degree 				
Outcomes	<ul style="list-style-type: none"> ➤ Creation of knowledge about conservation of soil health through development of vermiculture and vermicomposting. ➤ Morphology and taxonomy of earthworms will be helpful to save our native earthworm species. Student can generate minimum income through install a smallscale vermi unit ➤ If they develop in commercial scale level they can provide employment opportunity to the rural peoples. 				

Semester-VI					
Course code: 22BZO6E3	DSE		T/P	C	H/W
	MUSHROOM CULTURE		T	6	6
Objectives	<ul style="list-style-type: none"> ➤ To teach the students knowledge and skills which allow them to establish a mushroom cultivation enterprises. ➤ Appropriate knowledge belongs principally to a new applied science and practice of mushroom cultivation. ➤ The develop skill work will autoclaves preparing sterile microbiological media and work with pure culture. 				
Outcomes	<ul style="list-style-type: none"> ➤ Determine the most important species of cultivates mushroom and known the basic ways of the cultivation of each of them. ➤ Can work with autoclaves ➤ Can prepare microbiological media Can work with pure culture of microorganisms. 				

Semester-VI					
Course code: 22BZO6E4	DSE		T/P	C	H/W
	BIOINFORMATICS AND COMPUTER APPLICATION		T	6	6
Objectives	<ul style="list-style-type: none"> ➤ To introduce the basics of bioinformatics- biological databases, retrieval tools and applications. ➤ To introduce MS Office applications, internet and its application ➤ To effective utilization of computer and applications in biological sciences ➤ To aware the students about the usages of E. mail and sending document through E.mail. To teach about usage of internet for collection of reading materials. To explain about the short cut keys and create a new word document. To teach to draw various diagrams using MS Excel. To motivate the students to prepare power point slides for effective presentation. 				
Outcomes	<ul style="list-style-type: none"> ➤ Basics of bioinformatics- biological databases, retrieval tools and applications. ➤ Students will familiar with Collection, Handling, Analysis of Biological Data. ➤ Student will familiar about the usage of E. mail and attaching documents. Students will learn about the collection of search engines and reading materials for their assignments and university examinations. ➤ Students will know creation of documents with MS office, MS Excel, MS Powerpoint. ➤ The presentation will become easy and effective while attending interviews. ➤ Students will easily attend online classes, interviews discussion and store their data in the cloud 				

Semester-VI					
Course code 22BZO6E5	DSE (A)		T/P	C	H/W
	POULTRY SCIENCE		T	6	6
Objectives	<ul style="list-style-type: none"> ➤ This course will cover all aspects of modern poultry production including breeding, nutrition, health, behavior, and well fare as well as quality of meat and eggs. ➤ The course is relevant for all students working in the field of poultry science and will provide the understanding of poultry production. 				
Outcomes	<ul style="list-style-type: none"> ➤ To understand breeding, nutrition half welfare and product quality ➤ Understand the power of genetic selected formulate diets for poultry ➤ Formulate diets for poultry Evaluate the quality of poultry meat and eggs. 				

Semester-VI					
Course code: 22ZOE6E6	DSE (B)		T/P	C	H/W
	SERICULTURE		T	6	6
Objectives	<ul style="list-style-type: none"> ➤ To Imparting training in Mulberry cultivation, silk worm rearing and silk reeling. ➤ To know various new technologies of mulberry production ➤ To know about significance of biological chemistry of silk worm. ➤ To know about the importance of cocoons. ➤ To understand the occurrence, distribution and crop loss due to mulberry pests and diseases. 				
Outcomes	<ul style="list-style-type: none"> ➤ Sericulture offers career opportunity in Govt. research centers, silk boards, academic fields, sericulture units, agriculture sector banks etc. ➤ One can get jobs in Central Government agencies like Central Silk Board/Silk Export Promotion Council/Fao/Nabard, Krishi Vigyan Kendra etc. ➤ Candidates with M.Sc sericulture can apply for the post of lecturer, professor and lab assistant. Sericulturists can find employment as officers, managers in the agricultural loan sector of nationalized as well as private banks. ➤ Consultants with in-depth and updated knowledge of the field are also in demand, especially to provide guidance for the setting up of sericulture farms. 				

Semester-VI					
Course code: 22BZO6E7	DSE (A)		T/P	C	H/W
	RECOMBINANT DNA TECHNOLOGY		T	6	6
Objectives	List out tools used for gene exploration Utilize the knowledge on creation of a genomic library Recall about transgenic plants and animals				
Outcomes	<ul style="list-style-type: none"> ➤ Isolate and purify nucleic acids for routine laboratory procedures ➤ Explain the underlying mechanisms of gene cloning ➤ Discuss the practical aspect of applying recombinant DNA technology ➤ Explain the significance of model organisms in recombinant DNA technology ➤ Describe recombinant gene expression systems. 				

Semester-VI					
Course code: 22BZO 6E8	DSE (B)		T/P	C	H/W
	BIOLOGY OF CLONING VECTORS		T	6	6
Objectives	To provide students with basic knowledge of the concepts and themes of gene cloning. To present the students with an overview of the various biological tools used in gene cloning. To outline the process of science in studying biological problems based on gene cloning techniques.				

Outcomes	<ul style="list-style-type: none"> ➤ At the end of this module, students will be able to gain knowledge about: - The various fundamental biological concepts and tools used in gene cloning. - The various steps of gene cloning. - The importance of gene cloning in the various fields of biotechnology. Cognitive skills (thinking and analysis). ➤ At the end of this module, students will be able to develop their intellectual skills through understanding the concepts of gene cloning and formulating questions and thinking of the appropriate answers to their questions. ➤ Communication skills (personal and academic). At the end of this module, students will be able to develop personal communication skills through participating in open-discussions with their colleagues and instructors. ➤ Practical and subject specific skills (Transferable Skills). ➤ At the end of this module, students will be able to: - Improve their ability to search for information using various communication settings. – ➤ Improve their ability to analyze data based on their understanding to the basic biological concepts of gene cloning. - Benefit from all supplementary material provided with the textbook.
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Semester–VI				
Course code: 22BZO 6E9	DSE	T/P	C	H/W
		FERMENTATION TECHNOLOGY	T	6
Objectives	<ul style="list-style-type: none"> ➤ To make students acquainted with principles of using of microorganisms in fermentation process. ➤ Attain knowledge of production equipment in fermentation industry, application of microorganisms and enzymes in technological operation, substrate preparation and control of fermentative process and isolation of products. ➤ Substantial time is devoted to particular fermented products -- spirits industry, yeast industry, brewing industry, production of microbial biomass and selected organic acids. 			
Outcomes	<p>Generic competences: - ability to apply knowledge - capacity to learn - general knowledge - professional knowledge</p> <p>Specific competences: - Knowledge of industry cultivation of microorganisms. - Knowledge of principles of fermentation technology. - Knowledge of production alcoholic beverages, beers, yeasts and food acids. - Knowledge of production equipment in fermentation technology.</p>			