

**A.V.V.M. SRI PUSHPAM COLLEGE (AUTONOMOUS),
POONDI-613 503, THANJAVUR**



1.1.1 Curricula developed and implemented have relevance to the local, national, regional and global developmental needs which is reflected in Programme outcomes (POs), Programme Specific outcomes (PSOs) and Course Outcomes (COs) of the Programmes offered by the Institution

COURSE OUTCOMES

B.Sc., ZOOLOGY WITH BIOTECHNOLOGY (2017 – 2018)

Semester	Category	Paper Code	Title of the Paper	Outcome
I	Part I	17U1ZOTI/H1	Tamil -I / Hindi-I	<ul style="list-style-type: none"> To know and get the awareness of recent tamil literature
	Part II	17U1ZOE1	English - I	<ul style="list-style-type: none"> To initiate the Students to understand English through Prose, Poetry and Basic Communicative Grammar.
	Core	17U1ZOC1	Invertebrata	<ul style="list-style-type: none"> To know the nomenclature, systematic position, classification of Invertebrates with suitable examples. To study the economic importance of protozoans, insects and molluscs. To study the parasitic adaptation of invertebrates.
	Core	17U1ZOC1	Practical-I (Invertebrata)	<ul style="list-style-type: none"> To know the evolutionary trend in the digestive, nervous systems of Earth worm, Cockroach, Pila and Freshwater mussel. To understand the mode of feeding in the insects observing the mouthparts.
	Allied	17U1ZOB0A1	Allied Botany - I	<ul style="list-style-type: none"> To make the students more competent in plant science and acquire skills to engage themselves in self-employment especially in different fields like Horticulture and Mushroom culture. To expose avenues of opportunities in the field of Plant Biotechnology which is

				growing phenomenally.
	Allied PL	17U2ZOB0APL	Allied Botany Practical (NS)	<ul style="list-style-type: none"> • To identify the families from locally available plants. • To know the various forms of algae, fungi, bryophytes, pteridophytes and gymnosperms • To study the various aspects of internal structures of root, stem and leaves. • To make the students to understand the various principles of physiological experiments. • To understand the techniques of horticulture and mushroom cultivation.
	ES	17U1ZOES	Environmental Study	<ul style="list-style-type: none"> • To get better awareness of Environmental Condition
	Part I	17U2ZOT2/H2	Tamil - II/ Hindi -II	<ul style="list-style-type: none"> • To know and get the knowledge of Literature of the middle ages.
	Part II	17U2ZOE2	English - II	<ul style="list-style-type: none"> • To impart language and communicative skills through short stories, one act plays and communicative grammar
	Core	17U2ZOC2	Microbiology	<ul style="list-style-type: none"> • To study about the Microscope - structure and function of various microscopes. • To study the classification of microorganisms and their structure. • To study about the preparation of bacterial culture medium and Gram's staining techniques. • To study the pathology of various microbes. • To study the role of microbes in

II				<p>agriculture, food and dairy industries.</p>
	Core	17U2ZOCP2	Practical-II (Microbial Techniques)	<ul style="list-style-type: none"> • To study about the Microscope – structure and function of various microscopes. • To study the classification of microorganisms and their structure. • To study about the preparation of bacterial culture medium and Gram’s staining techniques. • To study the pathology of various microbes. • To study the role of microbes in agriculture, food and dairy industries.
	Allied	17U2ZOBOA2	Allied Botany – II	<ul style="list-style-type: none"> • To enable the students to get a fair knowledge of morphology and taxonomy of angiosperms. • To learn the applied aspects of biotechnology, horticulture and mushroom cultivation.
	Allied PL	17U2ZOBOAPL	Allied Botany Practical(N.S)	<ul style="list-style-type: none"> • To identify the families from locally available plants. • To know the various forms of algae, fungi, bryophytes, pteridophytes and gymnosperms • To study the various aspects of internal structures of root, stem and leaves. • To make the students to understand the various principles of physiological experiments. • To understand the techniques of horticulture and mushroom

				cultivation.
	VBE	17U2ZOVE	Value Based Education	<ul style="list-style-type: none"> • To enhance the understanding of Human physical and mental health and the ability to maintain it well to the life and beyond.
	Skill Based Elective -I	17U2ZOS1	Clinical Analysis of Biological Samples	<ul style="list-style-type: none"> • To study the Safety regulation and first aid. • To know the Clinical tests of Blood, Urine, Sputum, Stool, Semen.
III	Part I	17U3ZOT3/H3	Tamil - III / Hindi - III	<ul style="list-style-type: none"> • To understand the differences and importance of Epics ,Essays, History of Tamil literature
	Part II	17U3ZOE3	English - III	<ul style="list-style-type: none"> • To introduce the language of the world renowned dramatist and novelist to enhance the vocabulary and communicative skills of the learners.
	Core	17U3ZOC3	Chordata	<ul style="list-style-type: none"> • To study about the chordate animals upto orders with suitable examples. • To study about the accessory respiratory organs and migration of fishes. • To study the parental care in Amphibia, poisonous and non-poisonous snakes of South India. • To study the flight adaptation and migration of birds. • To study prototheria, metatheria and dentition in mammals. • To study the detailed information about Amphioxus, Scoliodon, Frog, Pigeon and Rat.
	Core	17U3ZOC3	Practical-III	<ul style="list-style-type: none"> • To know the various systems of Calotes and Rat.

			(Chordata)	<ul style="list-style-type: none"> To study the important chordate animals as spotters.
	Allied	17U3ZOCHA1	Allied Chemistry-I	<ul style="list-style-type: none"> Students should be able to understand the standardized names and symbols to represent atoms, molecules, ions and apply on chemical reactions. Students should be able to explain the behavior and interactions between matter and energy at both the atomic and molecular levels.
	GS	17U2ZOGS	Gender Studies	<ul style="list-style-type: none"> To know the differences Understanding Gender to treat other genders with goodness
	Part I	17U4ZOT4/H4	Tamil - IV/ Hindi -IV	<ul style="list-style-type: none"> To know and get the knowledge of Classical, Sangam, Moral Literatures of Tamil language.
	Part II	17U4ZOE4	English - IV	<ul style="list-style-type: none"> To prepare the learners for competitive examinations and to know the fundamentals of practical communication.
	Core	17U4ZOC4	Biochemistry, Biophysics and Biostatistics	<ul style="list-style-type: none"> To study the classification, structure and biological importance of carbohydrates, protein, lipid . To study the basic structure of nucleic acids. To study the classification, kinetics of enzymes and its role in food industries and also to know the significance of ELISA test in immuno technology To study the principles of colorimetry and Spectroscopy and

IV				<p>its working mechanisms and also to known about ECG, EEG and NMR Scanning.</p> <ul style="list-style-type: none"> • To study the basics of biostatistics.
	Core	17U4ZOCP4	Practical - IV (Biochemistry, Biophysics and Biostatistics)	<ul style="list-style-type: none"> • To understand the level of sugar, proteins, and lipids in biological samples by qualitative and quantitative estimation.
	Allied	17U4ZOCHA2	Allied Chemistry - II	<ul style="list-style-type: none"> • Students should understand the possible chemical modification of Aromatic compounds. • Students should able to learn accepted models to describe the reactions between gaseous systems and become aware of their physical properties.
	Allied PL	17U4ZOCHAPL	Allied Chemistry Practical	<ul style="list-style-type: none"> • Facilitate the learner to make solutions of various molar concentrations.
	Skill Based Elective -II	17U2ZOS2	Techniques in Clinical Lab (Practical)	<ul style="list-style-type: none"> • Learn and maintain the laboratory. • Improve the medical oriented practical techniques. • Knowledge the maintain the sterilization methods of glassware. • Gain knowledge on medical laboratory facilities. • Understand the prevention and control of microbial infection.
	Core	17U5ZOC5	Cell Biology & Genetics	<ul style="list-style-type: none"> • To study the structure and functions of plasmambrane and cytoplasmic organelles. • To study the ultra structure and

V				<p>functions of nuclear components and importance of cell division.</p> <ul style="list-style-type: none"> • To know the Mendelian principles, crossing over, linkage, chromosomal mapping, mutations, sex linked inheritance, non disjunction of chromosome, and sex determination. • To study the fine structure of gene, Operon concept, and Inborn error metabolism in man.
	Core	17U5ZOC6	Developmental Biology & Evolution	<ul style="list-style-type: none"> • To study the various theories of developmental biology and gametogenesis. • To study parthenogenesis, types of eggs, cleavage, blastulation, and gastrulation in amphioxus, Frog, Chick, and Mammals. • To study the organogenesis of chick and placenta in mammals. • To study about the origin of life and evidences of evolution. • To study the speciation and isolation, mimicry and colouration and evolution of Horse and Man.
	Core	17U5ZOC7	Immunology	<ul style="list-style-type: none"> • To study about different immunities and Lymphoidal organs. • To study about the Biosynthesis of Immunglobulins with functions and Theories of antibody formation. • To study the structure and functions of Antigens and Antibodies. • To study about the antigen-antibody reactions.

				<ul style="list-style-type: none"> To study about the Vaccines for infectious disease, blood grouping, and transplantation.
	Core	17U5ZOCP5	Practical - V (Cell Biology, Genetics, D.B. and Evolution & Immunology)	<ul style="list-style-type: none"> To learn the handling of microscope and to observe the cell divisions. To identify the blood groups and Mendelian characters of Man To observe the various hours of chick embryo. To know the evolutionary significance with suitable examples. To identify the primary and secondary lymphoid organs in Rat.
	Major Elective I	17U5ZOEL1A 17U5ZOEL1B	Public Health and Hygiene Biosafety and IPR	<ul style="list-style-type: none"> To study about the awareness on public health and hygiene. (or) To create knowledge on health education.
	Major Elective II	17U5ZOEL2A 17U5ZOEL2B	Aquaculture Vermiculture	<ul style="list-style-type: none"> To study the water quality management To study the culture Techniques of Important Fresh water fishes. To study the culture Techniques of Ornamental fish culture To study the disease management during aquaculture.
	NME	17U5ZONME	Non-Major Elective - Aquaculture	<ul style="list-style-type: none"> To study the water quality management To study the culture Techniques of Important Fresh water fishes. To study the culture Techniques of Ornamental fish culture To study the disease management during aquaculture.

	SSD	17U5ZOSSD	Soft Skill Development	<ul style="list-style-type: none"> • Developing organizational behavior and employment skills to the employment organizations
VI	Core	17U6ZOC8	Comparative Animal Physiology & Environmental Biology	<ul style="list-style-type: none"> • To study the types of food components, metabolism of carbohydrate, protein and lipid, Blood composition and it's function, respiratory pigments and transport of O₂ and CO₂. • To study the structure and functions of Heart and Kidney, Osmo – ionic regulation in aquatic animals and modes of excretion. • To study the different types of effectors and receptors, muscle contractions and transmission of nerve impulse. • To study the physico-chemical parameters in eco system and to know the animal relationship and population. • To study about the animal association and various types of pollution.
	Core	17U6ZOC9	Molecular Biology & rDNA Technology	<ul style="list-style-type: none"> • To study the DNA replication, denaturation, renaturation, hybridization, mutations, recombinations, and functions of prokaryotes and eukaryotes and role of enzymes. • To study different types of RNA and its role in protein synthesis. • To study Gene cloning and construction of r-DNA and also

				<p>different types of cloning vectors.</p> <ul style="list-style-type: none"> • To know about different methods of gene transfer techniques. • To study Hybridoma Technology for the production of Monoclonal antibodies. • To study about the application of r-DNA Technology and genetically engineered microbes in agriculture.
	Core	17U6ZOC10	Applied Zoology	<ul style="list-style-type: none"> • To study about the culture of aquatic organism. • To study about the culture of Bee keeping. • To study about the economic importance of poultry farming. • To generate the motivations for self employment. • To learn about the rural based and welfare oriented agro based industry
	Core	17U6ZOC6	Practical-VI (Animal Physiology, E.B, Molecular Biology, rDNA Technology & Applied Zoology)	<ul style="list-style-type: none"> • To learn the estimation of O₂ consumption by fish, Enumeration of RBC and WBC and qualitative tests for nitrogenous excretory products. • To know about determination of Urine sugar in Man, demonstration of blood pressure in Man. • To study about the dissolved O₂, CO₂, salinity, pH in water samples, identification of plankton and animal relationship with suitable examples. • To learn the techniques of isolation of DNA, RNA and plasmid, southern

				<p>blotting and separation of proteins by PAGE Electrophoresis.</p>
	<p>Major Elective III</p>	<p>17U6ZOEL3A 17U6ZOEL3B</p>	<p>Bioinformatics Bioinstrumentation</p>	<ul style="list-style-type: none"> • To study about the scope of Bioinformatics and usage of www. • To study about the various databases in related with protein and nucleic acid sequences. • To know about the gene sequencing studies. • (or) • To know the principle and Working mechanism of the following instruments.
	<p>Major Elective IV</p>	<p>17U6ZOEL4A 17U6ZOEL4B</p>	<p>Animal & Environmental Biotechnology Poultry Science</p>	<ul style="list-style-type: none"> • To study about techniques of animal tissue cultures, cryopreservation of sperms and embryo transformation. • To study about the role of microbes in Bio-gas production, Ethanol production and conventional fuels, Bioleaching, Biomining and Biofertilizers. • To study about the sewage treatment methods.
	<p>GK</p>	<p>17U6ZOGK</p>	<p>General Knowledge</p>	<ul style="list-style-type: none"> • To make awareness of GK in Competitive World.
	<p>CN</p>	<p>17U6ZOCN</p>	<p>Comprehensive Test</p>	<ul style="list-style-type: none"> • To better for the preparations of Competitive Exams in advance.