

Rayat Shikshan Sanstha's
Arts, Science and Commerce College, Mokhada, Dist. Palghar
Department of Zoology
List of Programs and Courses

Sr. No.	Program Name	Course code	Course Name
1	F.Y.B.Sc. Sem-I	USZO101	Wonders of Animal World, Biodiversity and its Conservation
2	F.Y.B.Sc. Sem-I	USZO102	Instrumentation and Animal Biotechnology
3	F.Y.B.Sc. Sem-I	USZOP1	Practical Based on Courses
4	F.Y.B.Sc. Sem-II	USZO201	Ecology and Wildlife Management
5	F.Y.B.Sc. Sem-II	USZO202	Nutrition, Public Health and Hygiene
6	F.Y.B.Sc. Sem-II	USZOP2	Practical Based on Courses
7	S.Y.B.Sc. Sem-III	USZO301	Fundamentals of Genetics, Chromosomes and Heredity, Nucleic acids
8	S.Y.B.Sc. Sem-III	USZO302	Study of Nutrition and Excretion , Respiration and circulation, Control and coordination, Locomotion and Reproduction
9	S.Y.B.Sc. Sem-III	USZO303	Ethology , Parasitology, Economic Zoology
10	S.Y.B.Sc. Sem-III	USZOP3	Practical based on courses
11	S.Y.B.Sc. Sem-IV	USZO401	Origin and evolution of Life, Population genetics and evolution, Scientific Attitude methodology , writing and ethics
12	S.Y.B.Sc. Sem-IV	USZO402	Cell Biology, Endo membrane System and Biomolecules
13	S.Y.B.Sc. Sem-IV	USZO403	Comparative Embryology, Aspects of Human Reproduction, Pollution and its effect on organisms
14	S.Y.B.Sc. Sem-IV	USZOP4	Practical Based on courses
15	T.Y.B.SC. ZOOLOGY Sem-V	USZO501	Taxonomy - Invertebrates and Type Study

16	T.Y.B.SC. ZOOLOGY Sem- V	USZO5 02	Hematology and Immunology
17	T.Y.B.SC. ZOOLOGY Sem- V	USZO5 03	Histology, Toxicology, Pathology and Biostatistics
18	T.Y.B.SC. ZOOLOGY Sem- V	USZO5 04	Anatomy and Developmental biology
19	T.Y.B.SC. ZOOLOGY Sem- V	USZOP 05	Practical based on courses
20	T.Y.B.Sc. Sem- VI Zoology	USZO6 01	Taxonomy - Chordates and Type Study
21	T.Y.B.Sc. Sem- VI Zoology	USZO6 02	Physiology and Tissue Culture
22	T.Y.B.Sc. Sem- VI Zoology	USZO6 03	Genetics and Bioinformatics
23	T.Y.B.Sc. Sem- VI Zoology	USZO6 04	Environmental Biology and Zoopharmacognosy
24	T.Y.B.Sc. Sem- VI Zoology	USZOP 06	Practical Based on courses



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DEPARTMENT OF ZOOLOGY

Programme Name: B.Sc. Zoology

Programme Outcomes

At the completion of B.Sc. (Zoology) the learner will be graduated with following outcomes:

Sr. No.	Programme Outcome
1	The programme course graduate in Zoology will make the learner to be able to classify the animals and draw conservation measures. Further learners will be able to make people aware about wildlife and need of conservation.
2	The learner will know the recent advances in the field of biotechnology, bioinformatics and molecular biology and the learners will be made skilful in handling the instruments in these processes.
3	The physiological, anatomical, embryological aspects of animal life would be well familiar to the learners.
4	The learner will get impetus for the research ideas and will obtain critical thinking abilities and awareness about the ethics of research community.
5	Learners will be sensitized for the social issues like pollution, conservation of resources, epidemiology and issues related with the public health.

Course Outcomes

Sr. No.	Unit	Outcome
F.Y.B.Sc. Sem. I, Course 1		
Wonders of Animal World, Biodiversity and its Conservation		
1.	Wonders of Animal World	Learners will be made curious for knowing about the amazing world of animals which would enhance their interest for the subject of Zoology
2.	Biodiversity and its Conservation	Learners would gain information on treasure of Biodiversity and its importance.
3.	Footsteps to follow	Learners would know about the previous workers and they will get impetus to work in this area through examples.
F.Y.B.Sc. Sem. I, Course 2		
Instrumentation and Animal Biotechnology		
4.	Laboratory safety, Units and Measurement	Learners will learn how to work safely in the laboratory and avoid accidents.
5.	Animal Biotechnology	Learners will come to know the recent advances in the field of biotechnology
6.	Instrumentation	Students will be made aware of the instrumentation and the equipments which can be used in the Zoological practicals
F.Y.B.Sc. Sem. II, Course 3		
Ecology and Wildlife Management		
7.	Population ecology	Students will be able to learn various aspects of population, its attributes and various ecological aspects
8.	Ecosystem	Learners would be acquainted with the knowledge of ecosystems and their types
9.	National parks and Sanctuaries of India	Learners would learn about the animal conservation strategies and various national parks situated in India
F.Y.B.Sc. Sem. II, Course 4		
Nutrition, Public Health and Hygiene		
10.	Nutrition and Health	Healthy food habits would be inculcated in the life style of learners which may help in preventing diseases.
11.	Public Health and Hygiene	Student will pursue the information regarding health aspects and measures to avoid diseases. They also will acquire knowledge about various diseases.

12.	Common Human Diseases and Disorders	Learner's will get knowledge about causes, symptoms and treatment.
S.Y.B.Sc. Sem. III, Course 5		
Fundamentals of Genetics, Chromosomes and Heredity, Nucleic acids		
13.	Fundamentals of Genetics	Learners would get the knowledge about basics of genetics and principles of inheritance.
14.	Chromosomes and Heredity	Learners would understand the structure of chromosomes and hereditary diseases.
15.	Nucleic acids	Learner would understand the importance of nucleic acids as genetic material and the vital life processes of cell.
S.Y.B.Sc. Sem. III, Course 6		
Study of Nutrition and Excretion , Respiration and circulation, Control and coordination, Locomotion and Reproduction		
16.	Study of Nutrition and Excretion	Learners will get the knowledge about the physiological aspects of nutrition and excretion. Further the unit will showcase the correlation between nutrition and excretion.
17.	Study of Respiration and circulation	Respiratory and circulatory systems are made familiar to the students through this unit.
18.	Control and coordination, Locomotion and Reproduction	Learners would know the concepts of coordination and locomotion in addition to that the unit explains reproductive physiology.
S.Y.B.Sc. Sem. III, Course 7		
Ethology , Parasitology, Economic Zoology		
19.	Ethology	Learners would get information on animal behaviour it's type along with evolutionary significance of animal behaviour.
20.	Parasitology	Learners would understand the general epidemiological aspects of parasites that affect humans and apply preventive measures for those parasites.
21.	Economic Zoology	Learners would learn about various domestic animals and the modern techniques used in animal husbandry.
S.Y.B.Sc. Sem. IV, Course 8		
Origin and evolution of Life, Population genetics and evolution, Scientific Attitude methodology , writing and ethics		

22.	Origin and evolution of Life	Mystery of how the life originated on earth will be resolved through this unit which will lead students to gain interest in the field of Evolutionary studies
23.	Population genetics and evolution	Learner's would understand the concepts of population genetics and evolutionary relationship of population genetics.
24.	Scientific Attitude methodology , writing and ethics	This unit will develop qualities such as critical thinking and analysis, the skills of scientific communication among the learners and they will be made aware of the ethical aspects of research.

S.Y.B.Sc. Sem. IV, Course 9

Cell Biology, Endomembrane System and Biomolecules

25.	Cell Biology	Learners would get the knowledge about the plasma membrane and transport system of the cell.
26.	Endomembrane System	Complete endomembrane system of the cell is made available through this unit to the students for better learning.
27.	Biomolecules	The learner will realize the importance of biomolecules and their clinical significance

S.Y.B.Sc. Sem. IV, Course 10

Comparative Embryology, Aspects of Human Reproduction, Pollution and its effect on organisms

28.	Comparative Embryology	Learner will be able to understand and compare the different pre- embryonic stages and extra embryonic membranes along with the different types of placenta.
29.	Aspects of Human Reproduction	Learners will be able to understand human reproductive physiology and techniques used.
30.	Pollution and its effect on organisms	The learners will be sensitized about the adverse effects of pollution and control measures.

T.Y.B.Sc. Sem. V, Course 11

Taxonomy - Invertebrates and Type Study

31.	Principles of Taxonomy	Learners will get the knowledge of classification of animals and the various basis categories for animal classification.
32.	Kingdom Animalia I	The learners will be familiarized with classification up to phylum Nematelmenthes along with their examples.
33.	Kingdom Animalia	Learners will get an idea of higher groups of

	II	invertebrate animal life, their classification and their peculiar aspects.
34.	Type study: Sepia	Learners will get the detailed knowledge of a mollusc, Sepia, its various systems and body functions.
T.Y.B.Sc. Sem. V, Course 12 Haematology and Immunology		
35.	Basic Haematology	Learners will be able to study different basic aspects of hematology, blood its function.
36.	Applied Haematology	Learners will get the knowledge about different applied aspects of hematology, diagnostic techniques and their uses.
37.	Basic Immunology	Learners will come to know the basics of our immune system and structure of antibodies.
38.	Applied Immunology	The learner will understand applied aspects of immunology and various techniques involved in the applied immunology.
T.Y.B.Sc. Sem. V, Course 13 Histology, Toxicology, Pathology and Biostatistics		
39.	Mammalian Histology	Learners will get the detailed knowledge about histological aspects of organs related with the digestive system.
40.	Toxicology	Knowledge of different types of toxins and dosage concentration will be made available to the learners through this unit.
41.	General Pathology	Learners will get the knowledge regarding general aspects of pathology and detailed information on various diseases.
42.	Biostatistics	Few of the essential statistical techniques useful in the analysis of biological parameters will be explained to the learners through this unit.
T.Y.B.Sc. Sem. V, Course 14 Anatomy and Developmental Biology		
43.	Integumentary system and derivatives	Learner will be able to understand the histology of integument and the importance of various types of epidermal and dermal derivatives along with their functions.
44.	Human Osteology	Learner will get the knowledge on the structure, types and functions of human skeleton.
45.	Muscles of long bones of Human limbs	Learner will be able to understand the types of long limb muscles, its arrangement and their role in body movements
46.	Developmental	Learner get the detailed knowledge of the

	biology of Chick	embryonic development chick.
T.Y.B.Sc. Sem. VI, Course 15		
Taxonomy - Chordates and Type Study		
47.	Phylum Chordata: Group Protochordata and Group Euchordata I	Learners will get the insight of detailed chordate classification along with the functions
48.	Group Euchordata II	Learners will get the knowledge on the characteristics of super class pisces and class amphibia along with the examples.
49.	Group Euchordata III	Learners will understand the characteristic features and examples of class of Reptilia, Aves and Mammalia
50.	Type study: Shark	Type study Shark is the representative model for getting the idea of vertebrate body anatomy and physiology hence learners will be able to know the detailed vertebrate study through the learning of Type Study Shark.
T.Y.B.Sc. Sem. VI, Course 16		
Physiology and Tissue Culture		
51.	Enzymology	Enzymes being important by all aspects, are made available through this unit. This unit will ensure that the learner will get the information on enzyme classification and other aspects of enzymology.
52.	Homeostasis	The learner shall know the adaptive responses of animals to environmental changes for their survival and other insights of homeostasis.
53.	Endocrinology	Learners would acquire the knowledge regarding the endocrine glands their secretions.
54.	Animal Tissue Culture	Learners will get the information on animal tissue culture techniques.
T.Y.B.Sc. Sem. VI, Course 17		
Genetics and Bioinformatics		
55.	Molecular Biology	This unit will let the learner to know about molecular aspects of cell biology, various life processes occurring in the cells, enzymes involved in the cell functioning.
56.	Genetic Engineering	The concept of genetic engineering is made clear to the learners through this unit.
57.	Human Genetics	The learner will get the information on human genetics various genetical disease of human and other aspects of human genetics.

58.	Bioinformatics	Learner will be able to know the application of computer and various software in the field of biological sciences.
T.Y.B.Sc. Sem. VI, Course 18		
Environmental Biology and Zoopharmacognosy		
59.	Environment management	Learner will understand the different factors affecting environment in addition to this the unit will give the information on legislative rules made for the management of environment.
60.	Wildlife Management	Learners will be acquainted with the knowledge of wildlife and its management aspects.
61.	Bioprospecting and Zoopharmacognosy	The learners will be able to know few of the interesting zoological concepts like bioprospecting and Zoopharmacognosy.
62.	Zoogeography	The learners will get knowledge of distribution pattern of animals throughout the earth and different realms present on the earth.