SARDAR PATEL UNIVERSITY B.Sc. Zoology Semester I Effective from June 2023 Zoology Core Course

Course Code	US01MAZOO01 (T)	Title of the Course	Animal Diversity and Physiology-1		
Total Credits of the Course	04	Hours per Week	04		
Programme outcome (PO) for	 Bachelor of Science degree program provides theoretical and practical knowledge of different Science subjects in consonance with National Education Policy 2020. This programme provides a flexibility to students to acquire certificate course, 				
B.Sc.	diploma course, degree programme, honours degree with or without research having multi entry and multi exit facilities.				
	3. Bachelor of Science programme at Sardar Patel University is designed keeping the overall back ground preparation in mind for the student to either opt for a Master programme or jobs or to become an entrepreneur.				
	 At the entry level of the programme, i.e., semester one, various subjects offered as major subject, minor subject, interdisciplinary subject as per choice of the students. 				
	 In addition to that, some skill enhancement courses, ability enhancement courses and value-added courses are also offered for overall development of the students. 				
	6. After end of the even semesters, the students may take exit after fulfilling the minimum requirements.				
	7. The students have the enough opportunity to complete four-year graduation programme with any major subject as per their choice.				
	 The students, after completion of the program from Sardar Patel University, can opt for the master's degree programme in the subject they have had at the final semester, or in a related discipline. 				
Course	1. To improve the	scientific aware	ness among the students.		
Outcome	2. To make students to understand the role and contribution of Zoology in the				
(CO) For Zoology	development of science.				
For Zoology	•		nd to give emphasis on the development of		
	•	•	s, calculations, and also on the limitations of		
	•		cientific data as well as results obtained. ng the concepts of Zoology.		

Course	1. The students will learn about the Lower and Higher Invertebrates			
Specific	2. The General account of Protozoan, Sponge and Coelomates			
Outcome	3. The General Account of Higher Invertebrates			
(CPO)	4. The Physiology of Digestion and Enzymatic activities and Dieses			
For				
Zoology,				
Theory and				
Practicals				
Course	1. To understand the Zoological concepts of Animal with particular emphasis on their			
Objectives:	Experimental outcomes.			
	2. To understand the basic concepts of types of Invertebrates. The unit also			
	introduces understanding of General Aspects of Invertebrate Phyla and Animals.			
	3. To provide exposure to Digestion process			
Unit	Description			
1	General characteristics and outline classification of lower Invertebrate Phyla, [up to			
	helminthes]			
	Physiology of Nutrition and reproduction in <i>Protozoa</i>			
	Life cycle and pathogenicity of Plasmodium vivax and Entamoeba histolytica			
	Sponges: Canal system and Skeleton			
	alternation of generations between sexual and asexual in Obelia			
	Life cycle and pathogenicity of Fesciola hepatica and Wuchereria bancrofti			
2	General characteristics and outline classification of Higher Invertebrate Phyla [up to			
	Echinodermata]			
	General characters of Annelida			
	Type Study: <i>Pheritima</i>			
	Economic importance of Annelida			
3	Social Life of Insect			
	Type study: <i>periplaneta</i>			
	Economic Importance of <i>Mollusca</i>			
	Water vascular system in Asteroidea			
4	Physiology Of Digestion:			
	Digestive organs and Digestive glands			
	Digestion of food			
	Absorption of food			
	Defecation			
	Disorders: Peptic Ulcer, Ulcerative Colitis, Gastro enteritis.			
Reference Boo				

- Modern Text book of Zoology Invertebrate by R.L.Kotpal
- Invertebrate Zoology by- Jordan & Verma
- A Text book of Animal Physiology by A.K.BERRY.
- Animal Physiology by M.P.ARORA.
- Principles of Anatomy & Physiology by TORTORA and GRABOWSKI

SARDAR PATEL UNIVERSITY B.Sc. FIRST SEMESTER PRACTICAL - ZOOLOGY Effective from June 2023

4 Credits, 8 periods per week

Course Code	US01MAZOO02 (P)	Title of the Course	Animal Diversity and Physiology-1
Total Credits of the Course	04	Hours per Week	04
Part-1	 Classification upto class using Permanent slides and Specimen of Entaoeba histolytica, Plasmodium Vivex, Leucosolenia, Sycon, Hydra viridis, Jellyfish(Aurelia), Sea anemone (Metridium), Classification upto class using Permanent slides and Specimen of Tap worm (Tenea Solium), Liver fluke (Fasciola hepatica)Ascaris Lumbricoides, Filaria (Wuchereria bancrofti) Reproduction like Binary Fission Amoeba, Euglena, Paramecium, Ceratium, Conjugation in Paramecium Permanent Slides, Sponges Canal system Asconoid, Sycanoid and Leuconoid and all types of Spicules Study of Obelia with permanent slides Life cycle and pathogenicity of Fesciola hepatica and Wuchereria bancrofti On field study of vermiculture 		
		he list can be ex	hibit to the students as per the availability in
Part-2	 the Institutes) Classification upto Class. Earthworm(pheretimaposthuma), Neries, Leech(hirudinariagranulose), Cockroach (Periplanetaamericana), Locust (swarming grasshopper), Prawn (Palaemon), Sea Cucumber(HolothuriaLinnaeus), Starfish (asteroid). Permanent slides, Chaetae (setae), jaws of leech, parapodia of Nereis, mouth parts of Cockroach, Spiracles, Trachea Social organization of Honey Bee Complete Metamorphosis in Insects To Study Amylase effect on Starch To Study Tripsin effect on Protein On field study of Insect Diversity 		
Reference Br	the Institutes)		,

Reference Books:

- A Manual of Practical Zoology- Invertebrate by P.S.VERMA
- Practical Physiology, Anatomy & Biochemistry by SHAH, PATEL& GOEL
- Practical Zoology Invertebrate by S.S. LAL

SARDAR PATEL UNIVERSITY B.Sc. Zoology Semester I US01MIZOO01 (T) Invertebrate Diversity Effective from June 2023

Zoology Core Course

Course Code	US01MIZOO01 (T)	Title of the Course	Invertebrate Diversity	
Total Credits of the Course	02	Hours per Week	02	
Programme outcome (PO) for B.Sc.	 knowledge of Education Pol 2. This program diploma cour having multice 3. Bachelor of S the overall ba Master progra 4. the entry level as major subj students. 5. In addition t courses and w the students. 6. After end of t minimum req 7. The students programme w 8. The students, can opt for the 	of different Sci licy 2020. me provides a fle se, degree progra entry and multi en- cience programm ack ground prepa amme or jobs or el of the program ject, minor subje to that, some sk value-added cour the even semeste juirements. have the enoug vith any major su	he at Sardar Patel University is designed keeping ration in mind for the student to either opt for a to become an entrepreneur. Inme, i.e., semester one, various subjects offered ct, interdisciplinary subject as per choice of the till enhancement courses, ability enhancement ses are also offered for overall development of ers, the students may take exit after fulfilling the h opportunity to complete four-year graduation bject as per their choice. n of the program from Sardar Patel University, e programme in the subject they have had at the	
Course Outcome (CO) For Zoology	 To improve to the develope To make stuthe develope To improve to the develope	the scientific aw dents to unders ment of science scientific attituc ental skills, dat of the experime ned.	vareness among the students. Stand the role and contribution of Zoology in	
Course Specific Outcome (CPO) For Zoology, Theory and Practicals	 The General The General 	account of Prot Account of Higl	at the Lower and Higher Invertebrates cozoan, Sponge and Coelomates ner Invertebrates and Enzymatic activities and Dieses	

T				
Course	1. To understand the Zoological concepts of Animal with particular emphasis on			
Objectives:	their Experimental outcomes.			
	2. To understand the basic concepts of types of Invertebrates. The unit also			
	introduces understanding of General Aspects of Invertebrate Phyla and			
	Animals.			
	3. To provide exposure to Digestion process			
Unit	Description			
1	General characteristics and outline classification of lower Invertebrate Phyla, [up to			
	helminthes]			
	Physiology of Nutrition and reproduction in <i>Protozoa</i>			
	Life cycle and pathogenicity of <i>Plasmodium vivax</i> and <i>Entamoeba histolytica</i>			
	Sponges: Canal system and Skeleton			
	Life cycle and pathogenicity of Fesciola hepatica and Wuchereria bancrofti			
2	General characteristics and outline classification of Higher Invertebrate Phyla [up to			
	Echinodermata]			
	General characters of Annelida			
	Economic importance of <i>Annelida</i>			
	Social Life of Insect			
	Economic Importance of <i>Mollusca</i>			
	Water vascular system in Asteroidea			

• Modern Text book of Zoology – Invertebrate by R.L.Kotpal

• Invertebrate Zoology by- Jordan & Verma

• A Text book of Animal Physiology by A.K.BERRY.

SARDAR PATEL UNIVERSITY B.Sc. FIRST SEMESTER PRACTICAL - ZOOLOGY US1MIZOO02 (P) Invertebrate Diversity Effective from June 2023

Course Code	US01MIZOO02 (P)	Title of the Course	Invertebrate Diversity
Total Credits of the Course	02	Hours per Week	04
	 Entaoeba histoly Jellyfish(Aurelia, fluke (Fasciola h Classification up Leech(hirudinari (swarming grass Cucumber(Holot Reproduction lik Conjugation in F Permanent Slide and all types of 	vtica, Plasmodiu), Sea anemone (epatica)Ascaris (to Class. Earthw (agranulose), Co (shopper), Prawn (huria <u>Linnaeus</u>), S (se Binary Fissio Paramecium (es, Sponges Can Spicules (se, Chaetae (seta (ach, Spiracles, Th (ion of Honey Be	e e

Reference Books:

• A Manual of Practical Zoology- Invertebrate by P.S.VERMA

• Practical Zoology Invertebrate by S.S. LAL

SARDAR PATEL UNIVERSITY B.Sc. Zoology Semester I US01IDZOO01 (T) Invertebrates Effective from June 2023

Zoology Core Course

Title of the				
Course Code	US01IDZOO01 (T)	Course	Invertebrates	
Total Credits of the Course	02	Hours per Week	02	
Programme outcome (PO) for B.Sc.	 knowledge of Education Poil This program diploma court having multite Bachelor of S the overall bac Master program the entry level as major sub- students. In addition to courses and of the students. After end of to minimum req The students, programme vo The students, can opt for the 	of different Sci- licy 2020. me provides a fle se, degree progra entry and multi en- cience programm ack ground prepa amme or jobs or el of the program ject, minor subje to that, some sk value-added cour the even semeste juirements. have the enoug vith any major su	ne at Sardar Patel University is designed keeping ration in mind for the student to either opt for a to become an entrepreneur. Inme, i.e., semester one, various subjects offered ct, interdisciplinary subject as per choice of the still enhancement courses, ability enhancement ses are also offered for overall development of ers, the students may take exit after fulfilling the h opportunity to complete four-year graduation bject as per their choice. n of the program from Sardar Patel University, e programme in the subject they have had at the	
Course Outcome (CO) For Zoology	 To make stuthe develope To improve of experimental limitations of results obtain 	dents to unders ment of science scientific attituc ental skills, dat of the experime ned.	vareness among the students. stand the role and contribution of Zoology in de and to give emphasis on the development ta analysis, calculations, and also on the ental method and Scientific data as well as anding the concepts of Zoology.	
Course Specific Outcome (CPO) For Zoology, Theory and Practicals	 The General The General 	account of Prot Account of Higl	at the Lower and Higher Invertebrates cozoan, Sponge and Coelomates ner Invertebrates and Enzymatic activities and Dieses	

1					
Course	1. To understand the Zoological concepts of Animal with particular emphasis on				
Objectives:	their Experimental outcomes.				
	2. To understand the basic concepts of types of Invertebrates. The unit also				
	introduces understanding of General Aspects of Invertebrate Phyla and				
	Animals.				
	To provide exposure to Digestion process				
Unit	Description				
1	General characteristics and outline classification of lower Invertebrate Phyla, [up to				
	helminthes]				
	Physiology of Nutrition and reproduction in Protozoa				
	pathogenicity of Plasmodium vivax and Entamoeba histolytica				
	Sponges: Canal system and Skeleton				
	pathogenicity of Fesciola hepatica and Wuchereria bancrofti				
2	General characteristics and outline classification of Higher Invertebrate Phyla [up to				
	Echinodermata]				
	General characters of Annelida				
	Economic importance of <i>Annelida</i>				
	Social Life of Insect				
	Economic Importance of <i>Mollusca</i>				
	Water vascular system in Asteroidea				

• Modern Text book of Zoology – Invertebrate by R.L.Kotpal

• Invertebrate Zoology by- Jordan & Verma

• A Text book of Animal Physiology by A.K.BERRY.

SARDAR PATEL UNIVERSITY B.Sc. FIRST SEMESTER PRACTICAL - ZOOLOGY US1IDZOO02 (P) Invertebrates Effective from June 2023

Course Code	US01IDZOO02 (P)	Title of the Course	Invertebrates
Total Credits of the Course	02	Hours per Week	02
	 Entaoeba histoly Jellyfish(Aurelia, fluke (Fasciola h Classification up Leech(hirudinari (swarming grass Cucumber(Holot Reproduction lil Conjugation in F Permanent Slide and all types of 	ytica, Plasmodiu), Sea anemone depatica)Ascaris oto Class. Earthy <i>iagranulose)</i> , Co shopper), Prawn churia <u>Linnaeus</u>), S ke Binary Fissio Paramecium es, Sponges Can Spicules es, Chaetae (seta ach, Spiracles, Th ion of Honey Be	e e

Reference Books:

• A Manual of Practical Zoology- Invertebrate by P.S.VERMA

• Practical Zoology Invertebrate by S.S. LAL

SARDAR PATEL UNIVERSITY B.Sc. Zoology Semester II US1SEZOO01 (T) Wildlife and Techniques Effective from June 2023

Zoology Core Course

Course Code	US01SEZOO01	Title of the	Wildlife and Techniques		
course coue	(T)	Course	Wildlife and Techniques		
	. ,				
Total Credits of	02	Hours per	02		
the Course	02	Week	02		
Programme outcome (PO) for B.Sc.	of different S 2. This program diploma cou having multi 3. Bachelor of S overall back programme of 4. At the entry major subject 5. In addition to and value-ad 6. After end of minimum rec 7. The students programme of The students opt for the m	Science degree p cience subjects in me provides a rse, degree prog entry and multi e Science program ground preparati or jobs or to beco level of the progr t, minor subject, o that, some skill ded courses are a the even semes juirements. s have the enou- vith any major su , after completion	ne at Sardar Patel University is designed keeping the on in mind for the student to either opt for a Master me an entrepreneur. Tamme, i.e., semester one, various subjects offered as interdisciplinary subject as per choice of the students. The enhancement courses, ability enhancement courses also offered for overall development of the students. Sters, the students may take exit after fulfilling the ugh opportunity to complete four-year graduation bject as per their choice. In of the program from Sardar Patel University, can rogramme in the subject they have had at the final		
Course			ills and awareness among the students.		
Outcome (CO) For Zoology	 To make standing Zoology in the standing To improve experimentation the experimentation 	tudents to und he developmen scientific attitu al skills, data an ental method a	derstand the role and contribution of wildlife		
Course Specific Outcome (CPO) For Zoology, Theory and Practicals		Account Techn	ut the Wildlife Techniques iques		

Course	 To understand the Zoological concepts of Animal with particular emphasis on their
Objectives:	Fields outcomes.
objectives.	2. To understand the basic concepts of wildlife and there studies

Description
Wild life of India,
Sanctuary of India.
National parks under special Projects: Tiger, Lion, Elephant, Crocodile, Spotted dear breeding
Projects
Endangered species
Wildlife Photography
Wildlife Handy tools Magnifying glass, Scale,
Camera traps
GPS collars
Telemetry equipment
Weatherproof stationery cases and bags
Tongs, Hooks
Data sheets

- Modern Text Book of zoology Vertebrate by R .L. KOTPAL.
- Chordate Zoology by Jordan and Verma.