"ज्ञान, विज्ञान आणि सुसंस्कार यासाठी शिक्षण प्रसार"

शिक्षणमहर्षी डॉसाळुंखे बापूजी .

Shri Swami Vivekanand Shikshan Sanstha's

Dattajirao Kadam Arts, Science & Commerce College, Ichalkaranji

B.Sc. Part III, SEMISER-V

Zoology (PAPER-IX)

DSE-E29 COMPARATIVE ANATOMY OF VERTEBRATES

Course Outcomes:-

After successful completion of the course, the student is expected to

CO1: Analyze complex interactions among the various animals of different phyla, their distribution and their relationship with the environment

CO2: Compare and contrast the anatomical systems of different vertebrate and identify common traits across species or group.

CO3: Recognize the vertebrate's structural principles by studying all body systems of vertebrates in an evolutionary context.

CO4: Learn the anatomical features that distinguish vertebrates from invertebrate system.

CO5: Recognize the vertebrates structural principles by studying all body systems of vertebrates in an evolutionary context.

Course Outcomes	Program Outcomes					Program Specific Outcomes				
	PO 1	PO 2	PO 3	PO 4	PO 5	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	1	2	1	1		3	2	1		
CO 2	2	1	1			3	3			
CO 3	2		1		1	2	2	1		
CO 4	2	1			1	3	2			
CO 5	2		1		1	2	2	1		

Note: Write the level of mapping for appropriate CO, PO and PSO

3: Substantial (High / Strong) 2: Moderate (Medium) 1: Slight (Low / Poor)

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B.Sc. Part III, SEMISER-V

Zoology Paper- X

DSE-F29 (Molecular Cell Biology and Animal Biotechnology)

Course Outcomes:-

After successful completion of the course, the student is expected to

CO1: Learn about various forms of DNA and Replication of DNA, DNA damage and repair mechanism.

CO2: Understand the concept about Genetic code and character and Codon assignment..

CO3:Understand the process of protein synthesis. To study various type of RNA and process of Transcription and Translation.

CO4: Acquire knowledge about Regulation of gene expression.

CO5: Understand various separation techniques, namely, centrifugation, chromatography, agarose gel electrophoresis, SDS-PAGE

Course Outcomes	Program Outcomes					Program Specific Outcomes				
	PO 1	PO 2	PO 3	PO 4	PO 5	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	2	1	1	1		1	3			3
CO 2	2					1	2			3
CO 3	3	1				1	2			3
CO 4	2	2				1	3			3
CO 5	1					2	3			3

Note: Write the level of mapping for appropriate CO, PO and PSO

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B.Sc. Part III, SEMISER-V

Zoology Paper- XI

DSE-F30 (Biotechniques and Biostatistics)

Course Outcomes:-

After successful completion of the course, the student is expected to:

CO1: Understand the basic concepts, importance and role of biotechniques in life sciences.

CO2: Explain the range of sterilization techniques, spanning from basic to advanced methods, including filtration, autoclaving, dry heat sterilization, wet sterilization, and radiation.

C03: Understand working principles of various sophisticated instruments by visiting biotechnology institutions and research centers.

CO4: Perform experiments related to use of various biotechniques studied in theory including sterilization and separation techniques.

CO5: Understand the meaning and importance concepts used in biostatistics, namely, sampling errors, mean, mode, median, probability, standard error and standard deviation

Course Outcomes	Program Outcomes					Program Specific Outcomes				
	PO 1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	2	1	1		1	1	2			3
CO 2	2	2				2	2			3
CO 3	2	1				1	2			2
CO 4	2	2				1	1			3
CO 5	3	1	1		1	2	2			2

Note: Write the level of mapping for appropriate CO, PO and PSO

3: Substantial (High / Strong) 2: Moderate (Medium) 1: Slight (Low / Poor)

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Dattajirao Kadam Arts, Science & Commerce College, Ichalkaranji

B.Sc. Part III, SEMISER-V

Zoology Paper- XII

DSE-F31 (AQUATIC BIOLOGY)

Course Outcomes:-

After successful completion of the course, the student is expected to:

CO1: Knowledge of various types of aquaculture and culture methods.

CO2: understand the Concept on the environment, aquaculture, and fisheries.

CO3: understand the effect of physicochemical parameters on aquatic biology.

CO4: Understanding of fishery science, with a particular focus on the biology, assessment, and management of fish and invertebrate fisheries

CO5: Awareness of the role of Government in aquaculture development.

Course Outcomes	Program Outcomes					Program Specific Outcomes				
	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	2	1				1	2	3		
CO 2	2	2	2		1		2	3		
CO 3	2	2					1	3		
CO 4	3	2					2	3		
CO 5	2		1	1	1		3	3		

Note: Write the level of mapping for appropriate CO, PO and PSO
3: Substantial (High / Strong) 2: Moderate (Medium) 1: Slight (Low / Poor)

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Dattajirao Kadam Arts, Science & Commerce College, Ichalkaranji

B.Sc. Part III, SEMISER-VI

Zoology Paper- XIII

DSE-E30 (DEVELOPMENTAL BIOLOGY OFVERTEBRATES)

Course Outcomes:-

CO1: understand the complex evolutionary processes and behavior of animals.

CO2: understand the process of development of chick embryo.

CO3: knowledge about organogenesis of selected organs, development of extra embryonic membrane and the nature and physiology of placenta.

CO4: know about the inducer and inductor role in embryogenesis and knowledge of metamorphosis and the process of regeneration.

CO5: Knowledge involves engaging in the direct observation of sperm motility and various stages of chick embryo development and animal placentation

Course Outcomes	Program Outcomes					Program Specific Outcomes				
	PO 1	PO 2	PO 3	PO 4	PO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO 1	3	2	2	1	2	1	3			
CO 2	2				1	1	3			
CO 3	2	2	3	1	2	1	3		2	
CO 4	1	2	3	2	1	1	3		2	
CO5			1			1			3	

Note: Write the level of mapping for appropriate CO, PO and PSO
3: Substantial (High / Strong) 2: Moderate (Medium) 1: Slight (Low / Poor)

Course Coordinator **Head of the Department**

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Dattajirao Kadam Arts, Science & Commerce College, Ichalkaranji

B.Sc. Part III, SEMISER-VI

Zoology Paper- XIV

DSE-E32 (IMMUNOLOGY)

Course Outcomes:-

After successful completion of the course, the student is expected to:

CO1: Describe the concept of immunity and understand the importance of having an immune system; study innate and acquired immunity in addition to different organs of the immune system

CO2: Analyze and inculcate the fundamental knowledge on immune system and immunological responses to antigens.

CO3: Describe the concept of immunity and understand the importance of having an immune system; study innate and acquired immunity in addition to different organs of the immune system.

CO4: Understanding the immune mechanisms in disease control, vaccination, process of immuneinteractions.

CO5: Understand the mechanism of antigen-antibody interactions based on structural details to explain humoral immunity

Course Outcomes	Program Outcomes					Program Specific Outcomes				
	PO 1	PO 2	PO 3	PO 4	PO 5	PSO1	PSO2	PSO3	PSO5	PSO5
CO 1	2	1		3	1		3			2
CO 2	3			2			3			2
CO 3	3		2	2			3			2
CO 4	2	2		3			3			2
CO 5	3	3		3			3			2

Note: Write the level of mapping for appropriate CO, PO and PSO
3: Substantial (High / Strong) 2: Moderate (Medium) 1: Slight (Low / Poor)

Course Coordinator **Head of the Department**

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Dattajirao Kadam Arts, Science & Commerce College, Ichalkaranji

B.Sc. Part III, SEMISER-VI

Zoology Paper- XV

DSE-E31 (Applied Zoology - II)

Course Outcomes:-

After successful completion of the course, the student is expected to

CO1:Understand the fundamentals of animal sciences, understands the complex interactions among various living organisms.

CO2: Explain different culture methods, namely, pearl culture, sericulture, apiculture , poultry farming and fish culture

CO3: Learn about commercial aspects of aquaculture by studying fish products and byproducts and study different methods of fish preservation

CO4: Learn about different diseases caused by different causative agents, namely, fungi, bacteria and protozoa.

CO5: Explain types, life cycles of honey bees and explain methods of apiculture along with commercial importance of bee products

Course Outcomes	Program Outcomes					Program Specific Outcomes				
	PO 1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO 1	3	1	2	2	2		1	3		
CO 2	3	1	1	2	2		1	3		
CO 3	3	1	2	2			1	2		
CO 4	2	1	1	2			1	2		
CO 5	2	1	2	2	2			3		

Note: Write the level of mapping for appropriate CO, PO and PSO
3: Substantial (High / Strong) 2: Moderate (Medium) 1: Slight (Low / Poor)

Course Coordinator **Head of the Department**

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Dattajirao Kadam Arts, Science & Commerce College, Ichalkaranji

B.Sc. Part III, SEMISER-VI
Zoology Paper- XVI

DSE-F32 (Insect Vectors and Histology)

Course Outcomes:-

After successful completion of the course, the student is expected to:

CO1: Identify various insect vectors, namely, mosquitoes, houseflies, sandflies, Tse-Tse flies and study their importance in completion of life cycles of various pathogens.

CO2: Able to understand insect vector and host interactions of various diseases like Malaria, Filaria, Dengue and environmental methods for vector control, biological contol.

CO3: Describe the histology and physiology of structure of Tooth, tongue, Salivary glands, Stomach, Duodenum, Ileum, Liver, Pancreas and Kidney.

CO4 Understand the histology of various mammalian organs with the help of available permanent slides.

CO5: Learn about general characters of Phylum Hemichordata and its phylogeny.

Course Outcomes	Program Outcomes					Program Specific Outcomes				
	PO 1	PO 2	PO 3	PO 4	PO 5	PSO1	POS2	PSO3	PSO4	PSO5
CO 1	3	3				2	1	2	3	2
CO 2	3	2	1	3	2	2	1	1	3	1
CO 3	3	1	1	3	2	1	1	2	3	2
CO 4	3	1	1	2	2	2	1	2	3	1
CO 5	3	2	2	2	2	2	1	2	3	

Note: Write the level of mapping for appropriate CO, PO and PSO

3: Substantial (High / Strong) 2: Moderate (Medium) 1: Slight (Low / Poor)

Course Coordinator **Head of the Department**