Year : Nov-Dec 2019-20 (IIIrd Sem): ZOO 501- Developmental Biology

Course Outcomes:

On completion of the course, students should be able-

1. To gain an understanding of the processes involved in embryonic development, including fertilization, cleavage, gastrulation, and organogenesis.
2. To learn about the mechanisms of cellular differentiation and specialization.
3. To understand the principles of pattern formation and morphogenesis, including the establishment of body axes, tissue patterning, and the formation of organs and structures.
4. To explore the biology of stem cells and their role in development.

CLASS AVERAGE	8.79	57.8
CLASS AVERAGE (Rounded Off)	9	57
Number of Students Who have scored more than Class Average	30	28
Percentage of Students who has scored more than Class Average	57.69	53.84
Score on Basis of Class Average Benchmark	02	02
Overall Attainment = (02 * 0.2) + (02 * 0.8) = 0.4 + 1.6 = 2.0		
Target Attainment Level Achieved		

CO-PO-PSO Attainment Matrix:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
CO1	H(2)	M(2)	M(2)	H(2)	-	-	-	-	-	H(2)	H(2)	M(2)	M(2)	H(2)
CO2	H(2)	H(2)	M(2)	M(2)	-	-	-	-	-	M(2)	M(2)	M(2)	M(2)	H(2)
CO3	H(2)	H(2)	H(2)	H(2)	-	-	-	-	--	H(2)	M(2)	M(2)	M(2)	M(2)
CO4	M(2)	M(2)	M(2)	M(2)	-	-	-	-	-	H(2)	M(2)	H(2)	H(2)	M(2)

Year : Nov-Dec 2019-20 (IIIrd Sem) : ZOO 502- Quantitative Biology

Course Outcomes:

On completion of the course, students should be able-

1. To develop proficiency in mathematical modelling techniques applied to biological systems.
2. To gain skills in statistical analysis and data visualization methods relevant to biological data, including hypothesis testing, regression analysis.
3. To understand the principles of systems biology and network theory, including the analysis of biological networks, metabolic pathways, and gene regulatory networks.

CLASS AVERAGE	8.8	56.11
CLASS AVERAGE (Rounded Off)	9	56
Number of Students Who have scored more than Class Average	30	29
Percentage of Students who has scored more than Class Average	58.82	56.86
Score on Basis of Class Average Benchmark	02	02
Overall Attainment = (02 * 0.2) + (02 * 0.8) = 0.4 + 1.6 = 2.0		
Target Attainment Level Achieved		

CO-PO-PSO Attainment Matrix:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
CO1	H(2)	M(2)	M(2)	H(2)	H(2)	-	-	-	-	H(2)	M(2)	M(2)	H(2)	M(2)
CO2	H(2)	H(2)	H(2)	M(2)	-	-	-	-	-	M(2)	M(2)	M(2)	H(2)	M(2)
CO3	H(2)	M(2)	M(2)	H(2)	-	-	-	-	-	M(2)	M(2)	M(2)	M(2)	M(2)

Year : Nov-Dec 2019-20 (III rd Sem) : ZOO 503- Fundamental Processes

Course Outcomes:

On completion of the course, students should be able-

1. To develop a deep understanding of the fundamental biological processes essential for the functioning of living organisms, including cellular respiration, photosynthesis, DNA replication, and protein synthesis.
2. To integrate knowledge from various disciplines, including biochemistry, molecular biology, genetics, and cell biology.
3. To acquire analytical skills to critically evaluate experimental data, understand research findings, and elucidate the underlying mechanisms and regulatory pathways governing fundamental biological processes.
4. To apply knowledge of fundamental processes to address research questions, design experiments.

CLASS AVERAGE	7.6	41.59
CLASS AVERAGE (Rounded Off)	8	42
Number of Students Who have scored more than Class Average	19	21
Percentage of Students who has scored more than Class Average	37.22	41.34
Score on Basis of Class Average Benchmark	01	01
Overall Attainment = (01 * 0.2) + (01 * 0.8) = 0.2 + 0.8 = 1.0		
Target Attainment Level under attained		

CO-PO-PSO Attainment Matrix:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
CO1	H(1)	M(1)	H(1)	M(1)	-	-	-	-	-	-	M(1)	H(1)	M(1)	H(1)
CO2	H(1)	H(1)	M(1)	H(1)	-	-	-	-	-	-	H(1)	H(1)	H(1)	M(1)
CO3	H(1)	M(1)	H(1)	M(1)	-	-	-	-	-	-	M(1)	H(1)	M(1)	H(1)
CO4	M(1)	H(1)	M(1)	H(1)	-	--	-	-	-	-	H(1)	M(1)	H(1)	M(1)

Year : Nov-Dec 2019-20 (III rd Sem) : ZOO 522- Animal Physiology- I

Course Outcomes:

On completion of the course, students should be able-
1. To gain an understanding of the physiological adaptations and mechanisms found in various groups of invertebrate animals.
2. To explore the nervous systems of invertebrates.
3. To learn about the respiratory reproductive and circulatory systems of invertebrates.
4. To understand how invertebrates regulate osmotic balance and excrete metabolic wastes.

CLASS AVERAGE	8.6	54.55
CLASS AVERAGE (Rounded Off)	9	55
Number of Students Who have scored more than Class Average	11	10
Percentage of Students who has scored more than Class Average	55	50
Score on Basis of Class Average Benchmark	02	02
Overall Attainment = (02 * 0.2) + (02 * 0.8) = 0.4 + 1.6 = 2.0		
Target Attainment Level Achieved		

CO-PO-PSO Attainment Matrix:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
CO1	H(2)	M(2)	M(2)	H(2)	-	-	-	-	-	-	H(2)	M(2)	H(2)	H(2)
CO2	H(2)	H(2)	H(2)	M(2)	-	-	-	-	-	-	H(2)	M(2)	M(2)	H(2)
CO3	H(2)	M(2)	M(2)	H(2)	-	-	-	-	-	-	H(2)	M(2)	H(2)	H(2)
CO4	H(2)	H(2)	M(2)	M(2)	H(2)	-	-	-	-	-	H(2)	M(2)	M(2)	H(2)

Year : Nov-Dec 2019-20 (III rd Sem) : ZOO 523- Molecular biology I

Course Outcomes:

On completion of the course, students should be able-
1. To gain understanding of the structure and function of biological macromolecules, including DNA, RNA, proteins, and lipids.
2. To learn about the organization and regulation of genomes.
3. To explore the mechanisms of DNA replication, repair, and recombination.
4. To acquire proficiency in molecular biology techniques and tools commonly used in research.

CLASS AVERAGE	8.6	52.89
CLASS AVERAGE (Rounded Off)	8	53
Number of Students Who have scored more than Class Average	11	12
Percentage of Students who has scored more than Class Average	55	60
Score on Basis of Class Average Benchmark	02	02
Overall Attainment = (02 * 0.2) + (02 * 0.8) = 0.4 + 1.6 = 2.0		
Target Attainment Level Achieved		

CO-PO-PSO Attainment Matrix:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
CO1	H(2)	H(2)	M(2)	H(2)	-	-	-	-	-	-	M(2)	M(2)	M(2)	H(2)
CO2	H(2)	H(2)	H(2)	M(2)	-	-	-	-	-	-	H(2)	M(2)	H(2)	M(2)
CO3	H(2)	M(2)	M(2)	H(2)	-	-	-	-	-	-	H(2)	M(2)	M(2)	M(2)
CO4	H(2)	H(2)	H(2)	H(2)	M(2)	-	-	-	-	-	M(2)	M(2)	M(2)	M(2)

Year : Nov-Dec 2019-20 (III rd Sem) : ZOO – 524 (Applied Parasitology- I)

Course Outcomes:

On completion of the course, students should be able-

1. To gain an in-depth understanding of the diversity of parasites, including protozoa, helminths, and arthropods, as well as their classification, morphology, life cycles, and evolutionary relationships.
2. To explore the interactions between parasites and their hosts.
3. To learn about the pathogenesis of parasitic diseases.
4. To acquire knowledge of diagnostic methods for detecting parasitic infections, treatment options for parasitic diseases.

CLASS AVERAGE	9;17	56.90
CLASS AVERAGE (Rounded Off)	9	57
Number of Students Who have scored more than Class Average	12	11
Percentage of Students who has scored more than Class Average	60	55
Score on Basis of Class Average Benchmark	02	02
Overall Attainment = (02 * 0.2) + (02 * 0.8) = 0.4 + 1.6 = 2.0		
Target Attainment Level Achieved		

CO-PO-PSO Attainment Matrix:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
CO1	H(2)	M(2)	M(2)	M(2)	M(2)	H(2)	-	-	-	-	M(2)	M(2)	M(2)	H(2)
CO2	M(2)	M(2)	M(2)	H(2)	-	-	-	-	-	-	H(2)	M(2)	H(2)	M(2)
CO3	H(2)	H(2)	H(2)	M(2)	-	-	-	-	-	-	H(2)	M(2)	M(2)	M(2)
CO4	H(2)	M(2)	M(2)	M(2)	H(2)	-	-	-	-	-	M(2)	M(2)	M(2)	M(2)

Year : Nov-Dec 2019-20 (IVth Sem) : ZOO – 511 (Evolution and Animal behavior)

Course Outcomes:

On completion of the course, students should be able-
1. To study the origin of various animal groups.
2. To study the mechanism involved in evolution.
3. To study the significance and pattern of evolution.
4. To explore the principles of behavioural ecology, including the study of interactions between organisms and their environments.

CLASS AVERAGE	9.45	53.8
CLASS AVERAGE (Rounded Off)	9	54
Number of Students Who have scored more than Class Average	29	37
Percentage of Students who has scored more than Class Average	58	30
Score on Basis of Class Average Benchmark	02	02
Overall Attainment = (02 * 0.2) + (02 * 0.8) = 0.4 + 1.6 = 2.0		
Target Attainment Level Achieved		

CO-PO-PSO Attainment Matrix:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
CO1	H(2)	M(2)	H(2)	M(2)	-	-	-	-	-	-	M(2)	H(2)	M(2)	H(2)
CO2	H(2)	H(2)	M(2)	H(2)	-	-	-	-	-	-	H(2)	H(2)	H(2)	M(2)
CO3	H(2)	M(2)	H(2)	M(2)	-	-	-	-	-	-	M(2)	H(2)	M(2)	H(2)
CO4	M(2)	H(2)	M(2)	H(2)	-	-	-	-	-	-	H(2)	M(2)	H(2)	M(2)

Year : Nov-Dec 2019-20 (IVth Sem): ZOO – 512 (Methods in Biology)

Course Outcomes:

On completion of the course, students should be able-
1. Tostudy the biochemical molecules and their interactions.
2. To study the principle and functioning of instruments used for biological study.
3. To explore the applications of instrumentation techniques in various areas of biological research.
4. To learn how to collect, process, and analyse experimental data generated by biological instrumentations.

CLASS AVERAGE	8.9	56.41
CLASS AVERAGE (Rounded Off)	9	56
Number of Students Who have scored more than Class Average	29	27
Percentage of Students who has scored more than Class Average	58	54
Score on Basis of Class Average Benchmark	02	02
Overall Attainment = (02 * 0.2) + (02 * 0.8) = 0.4 + 1.6 = 2.0		
Target Attainment Level Achieved		

CO-PO-PSO Attainment Matrix:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
CO1	H(2)	H(2)	H(2)	H(2)	-	-	-	-	-	-	H(2)	H(2)	M(2)	M(2)
CO2	M(2)	M(2)	H(2)	M(2)	-	-	-	-	-	-	M(2)	H(2)	H(2)	M(2)
CO3	H(2)	M(2)	M(2)	H(2)	-	-	-	-	-	-	M(2)	H(2)	M(2)	H(2)
CO4	H(2)	H(2)	H(2)	M(2)	-	-	-	-	-	-	M(2)	H(2)	M(2)	M(2)

Year : Nov-Dec 2019-20 (IVth Sem): ZOO- 513 (Applied Zoology)

Course Outcomes:

On completion of the course, students should be able-

1. To study the applied aspects of zoology.
2. To study the principle and functioning of new technologies used in Zoology.
3. To learn the principles and methods of tissue culture.
4. To acquire practical skills in microbiological techniques commonly used in research and industry.

CLASS AVERAGE	8.3	55.4
CLASS AVERAGE (Rounded Off)	8	55
Number of Students Who have scored more than Class Average	26	30
Percentage of Students who has scored more than Class Average	52	60
Score on Basis of Class Average Benchmark	02	02
Overall Attainment = (02 * 0.2) + (02 * 0.8) = 0.4 + 1.6 = 2.0		
Target Attainment Level Achieved		

CO-PO-PSO Attainment Matrix:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
CO1	H(2)	M(2)	M(2)	H(2)	--	-	-	-	-	-	M(2)	H(2)	H(2)	H(2)
CO2	H(2)	H(2)	H(2)	H(2)	-	-	-	-	-	-	M(2)	M(2)	M(2)	M(2)
CO3	H(2)	M(2)	M(2)	H(2)	-	-	-	-	-	--	M(2)	H(2)	H(2)	H(2)
CO4	H(2)	H(2)	H(2)	H(2)	-	-	-	-	-	-	H(2)	H(2)	M(2)	M(2)

Year : Nov-Dec 2019-20 (IVth Sem): ZOO- 532 (Animal Physiology- II)

Course Outcomes:

On completion of the course, students should be able-

1. To develop a comprehensive understanding of the structure and function of physiological systems in vertebrate animals.
2. To learn about the mechanisms of homeostasis and regulation that maintain internal balance and stability in vertebrate organisms.
3. To explore how different physiological systems interact and integrate to support overall organismal function and adaptation to different environmental conditions.
4. To understand the practical applications of vertebrate animal physiology in various fields, including biomedical research, veterinary medicine, zoology, ecology, and conservation biology.

CLASS AVERAGE	9.4	57.4
CLASS AVERAGE (Rounded Off)	9	57
Number of Students Who have scored more than Class Average	11	12
Percentage of Students who has scored more than Class Average	55	60
Score on Basis of Class Average Benchmark	02	02
Overall Attainment = (02 * 0.2) + (02 * 0.8) = 0.4 + 1.6 = 2.0		
Target Attainment Level Achieved		

CO-PO-PSO Attainment Matrix:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
CO1	H(2)	M(2)	M(2)	H(2)	-	-	-	-	-		M(2)	M(2)	H(2)	H(2)
CO2	H(2)	H(2)	H(2)	M(2)	-	-	-	-	-	-	H(2)	H(2)	M(2)	M(2)
CO3	H(2)	M(2)	M(2)	H(2)	-	-	-	-	-	-	M(2)	M(2)	H(2)	H(2)
CO4	H(2)	H(2)	H(2)	M(2)	-	-	-	-	-	-	H(2)	H(2)	M(2)	M(2)

Year : Nov-Dec 2019-20 (IVth Sem): ZOO- 533 (Molecular Biology- II)

Course Outcomes:

On completion of the course, students should be able-
1. Toimpart knowledge in evolving biological science at molecular level.
2. To impart understanding of the fundamental process governing life and information flow
3. To inculcate interest in research molecular biology and creating human capacity for this region..
4. To acquire proficiency in molecular biology techniques and tools commonly used in research.

CLASS AVERAGE	9.9	57.4
CLASS AVERAGE (Rounded Off)	9	57
Number of Students Who have scored more than Class Average	12	12
Percentage of Students who has scored more than Class Average	60	60
Score on Basis of Class Average Benchmark	02	02
Overall Attainment = (02 * 0.2) + (02 * 0.8) = 0.4 + 1.6 = 2.0		
Target Attainment Level Achieved		

CO-PO-PSO Attainment Matrix:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
CO1	H(2)	M(2)	M(2)	H(2)	--	-	-	-	-	-	M(2)	H(2)	H(2)	H(2)
CO2	H(2)	H(2)	H(2)	H(2)	-	-	-	-	-	-	M(2)	M(2)	M(2)	M(2)
CO3	H(2)	M(2)	M(2)	H(2)	-	-	-	-	-	--	M(2)	H(2)	H(2)	H(2)
CO4	H(2)	H(2)	H(2)	H(2)	-	-	-	-	-	-	H(2)	H(2)	M(2)	M(2)

Year : Nov-Dec 2019-20 (IVth Sem): ZOO- 534 (Applied Parasitology- II)

Course Outcomes:

On completion of the course, students should be able-
1. To study major types of parasites of medical & veterinary importance.
2. To study identification of common parasites of humans and animals.
3. To design and evaluate an intervention to control food and waterborne diseases.
4. To prepare the experts in the field of Medical and Veterinary Parasitology.

CLASS AVERAGE	8.9	55.45
CLASS AVERAGE (Rounded Off)	9	55
Number of Students Who have scored more than Class Average	9	11
Percentage of Students who has scored more than Class Average	55	45
Score on Basis of Class Average Benchmark	02	02
Overall Attainment = (02 * 0.2) + (02 * 0.8) = 0.4 + 1.6 = 2.0		
Target Attainment Level Achieved		

CO-PO-PSO Attainment Matrix:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4
CO1	H(2)	H(2)	H(2)	H(2)	-	-	-	-	-	-	H(2)	H(2)	M(2)	M(2)
CO2	M(2)	M(2)	H(2)	M(2)	-	-	-	-	-	-	M(2)	H(2)	H(2)	M(2)
CO3	H(2)	M(2)	M(2)	H(2)	-	-	-	-	-	-	M(2)	H(2)	M(2)	H(2)
CO4	H(2)	H(2)	H(2)	M(2)	-	-	-	-	-	-	M(2)	H(2)	M(2)	M(2)