



CHANDIDAS MAHAVIDYALAYA

DEPARTMENT OF ZOOLOGY



A Govt. Aided Degree College Affiliated to the University of Burdwan
UGC Accredited under section 2(f) & 12(B) [1979] * NAAC Accredited in 2016
KHUJUTIPARA, BIRBHUM, WEST BENGAL, INDIA- 731215
Email: sayantbanerjee2010@gmail.com (HOD)
Mobile: 8116338627 (HOD)

Department of Zoology

B.Sc. Zoology (General) Programme

Program Specific Outcomes

After graduating with a degree in Zoology, the students have a wide scope in different fields. Apart from opting for higher studies, the students can also build their carrier in a variety of related branches of science:

- Related paramedical fields such as health sciences.
- Agricultural sciences
- Food technology and Processing
- Wildlife officers
- Marine Biologist
- Professional field such as Poultry, Sericulture, apiculture, Pisciculture, dairy etc.


Dept. of Zoology
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Khujutipara, Birbhum





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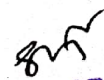
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B.Sc. Zoology (General) Programme Course Outcomes

CORE COURSES (CC)	
Course Name	Course Outcome
CC 1A: ANIMAL DIVERSITY	This course includes a theory as well as a practical paper. After completion of this course, students would be able to understand-animal diversity around us, underlying principles of classification of animals and differences and similarities among the various animal groups etc.
CC 1B: COMPARATIVE ANATOMY AND DEVELOPMENTAL BIOLOGY OF VERTEBRATES	This course includes a theory as well as a practical paper. At the end of this course, students would have a clear idea about - the anatomy of various systems in the vertebrates including mammals, early and systematic embryological development in vertebrates, principles and process of fertilization and cleavage and Identify the developmental stages in vertebrates etc.
CC 1C: PHYSIOLOGY AND BIOCHEMISTRY	This course includes a theory as well as a practical paper. After completion of this course, students would be able to explain- various physiological processes in mammals including human, reproductive cycles with hormonal control, basic terms in biochemistry, structure, functions and reactions of the various biomolecules and correlate the changes in the levels of these biomolecules with the diseases in human etc.
CC 1D: GENETICS AND EVOLUTIONARY BIOLOGY	This course includes a theory as well as a practical paper. After completion of this course, students would have clear idea about- the basic terms in genetics, concept of linkage groups and gene frequency, DNA structure, mutation, origin of life, various processes and theories of evolution, speciation etc.


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
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DISCIPLINE SPECIFIC ELECTIVE COURSES (DSE)	
Course Name	Course Outcome
DSE 1A: APPLIED ZOOLOGY	This course includes a theory as well as a practical paper. After successfully completing this course students would gain knowledge about- various vectors, parasitic diseases and their impact on human health, different pests and their management, poultry and genetic improvement technique in fishes etc.
DSE 1A (OR): AQUATIC BIOLOGY	This course includes a theory as well as a practical paper. After successfully completing this course students would be able to understand various concept and process of fisheries and their scopes etc.
DSE 1B: IMMUNOLOGY	This course includes a theory as well as a practical paper. After successfully completing this course students would have a clear idea about the basic concepts of immunology, role of different cells of the immune system in disease protection, concepts of antibody and antigen and various immunological techniques etc.
DSE 1B (OR): INSECT, VECTOR AND DISEASES	This course includes a theory as well as a practical paper. After successfully completing this course students would have a clear idea about the concept of vectors and role of vectors in various human diseases in detail.


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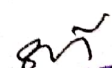
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SKILL ENHANCEMENT COURSES (SEC)	
Course Name	Course Outcome
SEC 1: APICULTURE	This course includes a theory paper. After completion of this course students would gain knowledge about the process of rearing of honey bees, the various diseases affecting honey bees and the mechanism of the disease prevention, the future prospects of apiculture etc.
SEC 2: MEDICAL DIAGNOSTICS	This course includes a theory paper. After completion of this course students would be able to understand principles of various biomedical techniques and their uses for the identification of various human diseases etc.
SEC 3: SERICULTURE	This course includes a theory paper. After completion of this course students would have a clear idea about the processes of sericulture, various diseases affecting silk moth and the prevention mechanism of these diseases, silk isolation and processing and the future prospects of silk industry etc.
SEC 4: COMMUNITY NUTRITION AND HEALTH STATISTICS	This course includes a theory paper. After completion of this course students would gain knowledge about the various terminologies used in community nutrition and health informatics, different bio-statistical methods for analysing community functioning etc.


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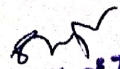
Department of Zoology

B.Sc. Zoology Three Years Major Programme

Program Specific Outcomes (PSO)

After graduating with a Three Year Major Degree in Zoology, the students have a wide scope in different fields. Apart from opting for higher studies, the students can also build their carrier in a variety of related branches of science:

- Related paramedical fields such as health sciences.
- Agricultural sciences
- Cell Biologist, Biochemist & Laboratory Technician
- Immunologist
- Food technology and Processing
- Wildlife officers
- Marine Biologist
- Start ups in the field of Poultry, Sericulture, apiculture, Pisciculture, dairy etc.


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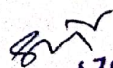
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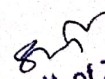
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DEPARTMENT OF ZOOLOGY B.S.C. ZOOLOGY THREE YEARS MAJOR PROGRAMME COURSE OUTCOMES (CO) CORE COURSES (CC)	
Course Name	Course Outcome
DSC 100 &101: NON-CHORDATES & PRACTICAL	<p>This course includes a theory as well as a practical paper. After completion of this course, students would be able to understand the diversity among the non-chordate animals around us, underlying principles of classification of non-chordate animals and differences and similarities among the various groups etc.</p> <p>At the end of the syllabus students learn the Systematic and biology of non chordates through their adaptive features and their body organization. Comprehend the identification of species and their evolutionary relationships.</p>
DSC 102 &103: CHORDATES & PRACTICAL	<p>This course is designed to give a learner the fundamental understanding of the diversity of Phylum Chordata with emphasis on their origin, key characteristics, classification, distribution, and function. This course will make the students enlightened with the concept of diversity, organization, adaptation, and taxonomic status of Chordates. The course will give an understanding of the systemic physiology of chordates. There will be a discussion about the affinities of chordates to different groups.</p> <p>The students will get knowledge to explain the diversity of Protochordates and chordates. Identify the taxonomic position of chordates, their diversity, and their distribution. Gain insights about economic importance and significance of Pisces and Pisciculture. Identify and distinguish between poisonous and non-poisonous snakes by observing characteristic features. Students gain knowledge about the composition and significance of venom. Gain insights About The Structural specialties of birds which will help them for Poultry (commercial application). Adaptive radiation of Mammals will give the insight into diversity and distribution of Mammals.</p>
NON-CHORDATES & PRACTICAL (MINOR)	<p>The main objective of this syllabus is to acquaint the students with the diversity of animals (invertebrates) of this universe especially their taxonomic position of the animal kingdom as well as their physiology and organ system.</p> <p>At the end of the course students will learn about the systematics and biology of non chordates through their adaptive features and body organization and comprehend the identification of species and their evolutionary relationships.</p>


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- Related paramedical
- Agricultural sciences
- and Processing

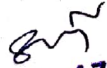
<p style="text-align: center;">CHORDATES & PRACTICAL (MINOR)</p>	<p>This course is designed to give a learner the fundamental understanding of the diversity of Phylum Chordata with emphasis on their origin, key characteristics, classification, distribution and functioning. This course will make the students enlightened with the concept of diversity, organization, adaptation and taxonomic status of Chordates. The course will give the understanding of systemic physiology of chordates. There will be discussion about the affinities of chordates to different groups.</p> <p>The students will get knowledge to explain the diversity of Protochordates and chordates, identify the taxonomic position of chordates, their diversity and distribution. They will gain insight into the economic importance and significance of Pieces and Pisciculture, and identify and distinguish between poisonous and non-poisonous snakes by observing characteristic features. Students will gain knowledge about the composition and significance of venom and the structural specialities of birds which will help them with Poultry (commercial application). Adaptive radiation of Mammals will give them insight into the diversity and distribution of Mammals.</p>
<p style="text-align: center;">SEC1: APICULTURE</p>	<p>The objective of this SEC course is to know the basic concepts of beekeeping by undergraduate students, and beginners. Students will get knowledge about different bees, culture techniques, honey harvesting, and knowledge diseases enemies of honey bees. The knowledge gained by the students can be utilized in the field or even to start their own enterprise after completion of the course.</p> <ul style="list-style-type: none"> • Get complete knowledge of honeybees and their different casts. • Get knowledge about artificial bee hive and their uses for apiculture. • To know about different diseases on enemies of honey bees. • Able to know the techniques of honey extraction and handling of honey bees. • Get a brief idea about entrepreneurship in Apiculture.
<p style="text-align: center;">SEC1 (OR): VERMICULTURE</p>	<p>Vermiculture is the study Commercial application of technologies that utilize earthworms for degrading waste organic materials for sanitation and agricultural re-use. Earthworms degrade organic waste materials and convert them into vermicompost. The main objective of this course is to provide the students with knowledge of vermiculture and its application in agriculture as well as entrepreneurship.</p> <ul style="list-style-type: none"> • The Course Has A Broad scope for Employability. • Students will gather knowledge on soil earthworms; their characteristic features, occurrence, and their influence on soil fertility and solid waste management are included. • Students will gather knowledge on Vermicomposting technology in respect of the global level as well as the Indian perspective. • Application of Vermiculture products and their benefits in agriculture practice.
<p style="text-align: center;">SEC2: SERICULTURE</p>	<p>The syllabus for Sericulture at undergraduate SEC according to NEP has been framed. The main objective of framing this new syllabus is to give the students a proper understanding of Sericulture. Students will get knowledge about mulberry plant cultivation, different silkworms, culture techniques, silk production, and the knowledge of diseases and enemies of silkworms. The students can be utilized the knowledge in starting their own enterprise after completion of the course.</p> <ul style="list-style-type: none"> • Get Complete Knowledge of Silkworms and their different types. • Get knowledge about technology of silkworm culture and making of silk. • To Know About Different Diseases On Enemies Of Silkworms. • Get a Brief Idea about entrepreneurship in Sericulture.


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**SEC2(OR):
AQUARIUM FISHKEEPING**

The course will impart basic knowledge of the ornamental fish industry and inculcate its scope as an avenue for career development as an entrepreneur or as an aquari-culturist.

- Students will be able to know the fundamentals of aquarium fish industry.
- Students will understand the biological features of aquarium fishes.
- Student will get to know the food and feeding habits of aquarium fishes.
- Student Will Get Aware About the Transportation of Fish
- Students will have 'hands-on' experience through exposure to technology, production, functioning, or operation of an aquarium in the ornamental fish farms, hatcheries, and fish feed production plant as study tours or field visits
- Know about Basic needs to setup an aquarium, i.e., dechlorinated water reflector, filters, scavenger, aquatic plants etc. and the ways to make it cost-effective.
- Manage fish diseases.
- Prepare the proper dosage of different kinds of natural and synthetic fish feed.
- Develop Personal Skills In the Maintenance of Aquarium.
- Become aware of Aquarium as commercial, decorative items and of scientific values.


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