



Anekant Education Society's

**Tuljaram Chaturchand College  
of Arts, Science, Commerce, Baramati**  
(Autonomous)

**DEPARTMENT OF ZOOLOGY**

(Faculty of Science and Technology)

**Minutes of Board of Studies Meeting No.08**

**Date of Meeting: 08/04/2023**

**Venue: Department of Zoology**

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April, 2023

Anekant Education Society's  
Tuljaram Chaturchand College of Arts, Science and Commerce, Baramati  
(Autonomous)

**Department of Zoology**

**AGENDA OF THE MEETING**

The agenda of the meeting included the following subjects:

1. To confirm the minutes of previous BoS meeting held on 06<sup>th</sup> October 2022.
2. To prepare and approve curriculum of S.Y.B.Sc. (Zoology) Semester-III (2022 pattern) to be implemented from the academic year 2022-2023.
3. To prepare and approve curriculum of M.Sc.-II (Zoology) Semester-III (2022 pattern) to be implemented from the academic year 2022-2023.
4. To discuss amendments (if any) in the curricula (2022 pattern) finalized in earlier meetings.
5. To discuss & finalize the syllabi of new certificate courses.
6. To discuss and incorporate the relevant feedbacks of the stakeholders (students, teachers, parents, alumni and employers) in the curriculum.
7. Any other issue with the permission of the chair.



Head,  
Department of Zoology

**Anekant Education Society's**  
**Tuljaram Chaturchand College, Baramati**  
**(Autonomous)**  
**Department of Zoology**  
**List of BoS Members**

The following internal and external BoS members attended the Board of Studies (Zoology) meeting through offline mode held on 08<sup>th</sup> April, 2023.

Sr. No.	Name of Member	Designation
1.	<b>Mr. Sandip P. Chordiya</b> Assistant Professor, Department of Zoology, T. C. College, Baramati	Chairman
2.	<b>Dr. Vitthal B. Nale</b> Assistant Professor, Department of Zoology, T. C. College, Baramati	Internal Member
3.	<b>Dr. Deepali M. Sangale</b> Assistant Professor, P.G. Coordinator, Department of Zoology, T. C. College, Baramati	Internal Member
4.	Dr. G. D. khedkar, Professor, Dr. B. A. M. University, Aurangabad	External Member, other University
5.	<b>Dr. Yogesh A. Karpe</b> Scientist B, Agharkar Research Institute, Pune	External Member, Research & Industry
6.	<b>Mr. Kishor U. More</b> Assistant Professor, Department of Zoology, T. C. College, Baramati	Internal Invitee Member
7.	<b>Mr. Mayur S. Shitole</b> Assistant Professor, Department of Zoology, T. C. College, Baramati	Internal Invitee Member
8.	<b>Ms. Tamanna S. Tamboli, (M.Sc.-II)</b>	PG Student
9.	<b>Mr. Shubham Ghadage, (M.Sc.-II)</b>	PG Student

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7. Any other issue with the permission of the chair.

## **MINUTES OF THE MEETING**

As per the Notice no. 456, dated 18/03/2023, issued by the college, the meeting of Board of Studies in Zoology was successfully held on 08<sup>th</sup> April, 2023 at 11:00 am in the Department of Zoology, T. C. College, Baramati. The meeting was conducted in the department of Zoology, adhering to the guidelines and protocols set by the college under the guidance of **Mr. Sandip P. Chordiya**, Chairman of the Board of Studies in Zoology. The meeting commenced with a warm welcome to all the esteemed members, followed by a brief introduction of the meeting's objectives

During the meeting, fruitful discussions were held on the items mentioned in the circulated agenda. We are pleased to inform you that the following resolutions were made during the BoS meeting.

**01) To confirm the minutes of previous BoS meeting held on 06<sup>th</sup> October 2022.**

**Resolution # 01** Minutes of the previous meeting were read by Mr. Sandip Chordiya and same were confirmed unanimously.

**02) To prepare and approve curriculum of S.Y.B.Sc. (Zoology) Semester-III (2022 pattern) to be implemented from the academic year 2022-2023.**

**Resolution # 01:** Curriculum of S.Y.B.Sc. (Zoology) Semester-III (2022 pattern) was discussed thoroughly. **Summary of the discussion is as follows and as per discussion, the curriculum was finalized and accepted unanimously.**

**USZL 231: Animal Systematics and Diversity-III**

UNIT	SUB UNITS	PROPOSED SYLLABUS	SUGGESTIONS FROM BOS MEMBERS
1.	Salient features and classification upto classes of the following: (any two examples from each class)		<b>No suggestions.</b>
	1.1	Arthropoda: - Crustacea, Arachnida, Insecta, Myriapoda and Onychophora.	
	1.2	Mollusca: - Aplacophora, Gastropoda, Scaphopoda, Pelecypoda, and Cephalopoda	
	1.3	Echinodermata:- Asteroidea, Ophuroidea, Holothuria, Echinoidea, and Crinoidea	

2.	<b>General topics:</b>		
	2.1	Metamorphosis, Mouthparts, Mimicry, Bioluminescence and Economic importance w. r. t. Insects	2.1 Insects: Metamorphosis, Mouthparts, Mimicry, Bioluminescence and Economic importance 2.2 Cephalopods: Nervous system and camouflage 2.3 Echinoderms: Autotomy and regeneration, Water vascular System and locomotion  (Changes suggested by Dr. G. D. Khedkar)
	2.2	Nervous system and camouflage in Cephalopods	
2.3	Autotomy and regeneration in Echinoderms, Water vascular System and locomotion in Echinoderms		
3.	<b>Study of Cockroach:</b>		<b>Biology of Cockroach</b> (Changes suggested by Dr. G. D. Khedkar)
	3.1	Systematic position, habits and habitat	Systematic position, habit and habitat (Changes suggested by Dr. G. D. Khedkar)
	3.2	External morphology and sexual dimorphism	No suggestions
	3.3	Digestive system.	
	3.4	Circulatory system	
	3.5	Respiratory system	
	3.6	Nervous system	Merge with 3.6 Sense organ (Changes suggested by Dr. G. D. Khedkar & Dr. Yogesh Karpe)
	3.6	Reproductive system	Change subunit number as 3.5 (Changes suggested by Dr. G. D. Khedkar & Dr. Yogesh Karpe)
	3.7	Sense organs	3.6 Nervous system & Sense organ (Changes suggested by Dr. G. D. Khedkar & Dr. Yogesh Karpe)

**USZL 232: Applied Zoology-II**

UNIT	SUB UNITS	PROPOSED SYLLABUS	SUGGESTIONS FROM BOS MEMBERS
1.	<b>Fisheries:</b>		
	1.1	An introduction to fisheries	An introduction to fisheries & aquaculture (Changes suggested by Dr. G. D. Khedkar)
	1.2	Different types of ponds used in fishery: Nursery Pond, Rearing Pond, Stock Pond	Different types of ponds used in fish farming: Nursery pond, rearing pond, stock pond  (Changes suggested by Dr. G. D. Khedkar)

	1.3	<b>Habit, habitat and culture methods of following freshwater forms:</b> a) Rohu ( <i>Labeo rohita</i> ) b) Catla ( <i>Catla catla</i> ) c) Mrigal ( <i>Cirrhinus mrigala</i> )	Introduction to composite fish farming of Indian major carps: Culture method, biology of fish (Rohu, Catla & Mrigal), seed rearing, food & feeding mechanism (Changes suggested by Dr. G. D. Khedkar)
	1.4	<b>Fish preservation technique:</b> a) Chilling b) Freezing c) Salting d) Canning	<b>Fish transport &amp; preservation:</b> a) Salting b) Chilling (Use of insulated containers) c) Freezing d) Canning (Changes suggested by Dr. G. D. Khedkar)
2.	<b>Pearl Culture:</b>		<b>Freshwater pearl culture:</b> (Changes suggested by Dr. G. D. Khedkar)
	2.1	<b>Introduction</b> <ul style="list-style-type: none"> <li>• Introduction to pearl culture</li> <li>• Global and national status of pearl culture</li> <li>• Significance of pearl culture</li> </ul>	
	2.2	<b>Soil and water management</b> <ul style="list-style-type: none"> <li>• Soil and water quality standards</li> <li>• Soil and water quality management: Cat clay/pyrite soil, seepage and its control, zero water exchange system, water filtration devices, aeration, chlorination, ozonization and radiation.</li> <li>• Organic and inorganic fertilizers</li> </ul>	<b>Soil and water management</b> <ul style="list-style-type: none"> <li>• Soil and water quality standards</li> <li>• Soil and water quality management: Cat clay/pyrite soil</li> <li>• Seepage and its control</li> <li>• Zero water exchange system</li> <li>• Water filtration devices, aeration, chlorination, ozonization and radiation.</li> <li>• Organic and inorganic fertilizers (Changes suggested by Dr. G. D. Khedkar)</li> </ul>
	2.3	<b>Oyster morphology and anatomy</b> <ul style="list-style-type: none"> <li>• Morphology</li> <li>• Internal anatomy: Alimentary canal and associated structure</li> </ul>	<b>Morphology and biology of <i>Lamellidians</i> spp.</b> <ul style="list-style-type: none"> <li>• Morphology</li> <li>• Anatomy: Alimentary canal and associated structure</li> </ul> (Changes suggested by Dr. G. D. Khedkar & Dr. Yogesh Karpe)
	2.4	<b>Formulation and preparation of artificial feeds for larval rearing</b>	
	2.5	<b>Implantation techniques in Pearl Culture</b> <ul style="list-style-type: none"> <li>• Pearl oyster Surgery and Precautions</li> <li>• Half round Pearl culture</li> <li>• Spherical Pearl implantation</li> <li>• Graft tissue preparation</li> <li>• Nucleus implantation</li> <li>• Beads insertion</li> </ul>	<b>Implantation techniques in Pearl Culture</b> <ul style="list-style-type: none"> <li>• Surgical procedures in pearl culture</li> <li>• Beads insertion</li> <li>• Nucleus implantation</li> <li>• Graft tissue preparation</li> </ul> (Changes suggested by Dr. G. D. Khedkar)

		<b>Post-operative care and marketing</b> <ul style="list-style-type: none"> <li>• Post-operative care. Precautionary measures of Pearl Culture</li> <li>• Quality improvement</li> <li>• Caring of pearl oyster</li> <li>• Harvesting of Pearl</li> <li>• Sorting of Pearl</li> <li>• Marketing and economics concerned with Pearl Culture</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the ‘Caring of pearl oyster’ by Caring of implanted bivalve (Changes suggested by Dr. G. D. Khedkar)</li> </ul>
3.	<b>Agricultural Pests and their control:</b>		<b>Integrated pests management in crops</b> (Changes suggested by Dr. Yogesh Karpe)
	3.1	An introduction to Pest, types of pests (agricultural, household, stored grain, structural, veterinary, forestry and nursery)	Introduction to insect pests in agricultural crop. Types of pests (agricultural, household) (Changes suggested by Dr. Yogesh Karpe)
	3.2	<b>Major insect pests of agricultural importance (Marks of identification, life cycle, nature of damage and control measures)</b> a) Jowar stem borer b) Rice weevil	Remove the entire subunit 3.2 (Changes suggested by Dr. V. B. Nale)
	3.3	Non insect pest: Rats, Crabs, Snails and Birds	Remove the entire subunit 3.3 (Changes suggested by Dr. G. D. Khedkar & Dr. V. B. Nale)
	3.4	Pest control practices in brief: Physical control, Mechanical control, Chemical control, biological control	Pest control practices in brief: Physical control, Mechanical control, Biocide based control (2-3 examples), biological control (Pheromones, traps and others) (Changes suggested by Dr. G. D. Khedkar)
4	<b>Dairy Science:</b>		<b>Introduction to dairy science</b>
	4.1	Dairy development in India Role of dairy development in rural economy, employment opportunities	4.1 Role of dairy development in rural economy
	4.2	Dairy Processing Filtration, cooling, chilling, clarification, pasteurization, freezing	4.2 Study of important Indian cattle breeds used in dairy: Deoni, Khillari, Red Kandhari, Malvi, Hariyana, Nagpuri & Murrha.
	4.3	Milk and milk products Composition of milk Types of milk: C. Buffalo milk and Cow milk (a1 and a2) D. Whole milk and toned milk	4.3 Exotic breeds: Jersey and Holstein
	4.4	<b>Indian Cattle breeds :</b> Malvi, Hariyana, Deoni, Red sindhi and Khillari	4.4 Milk Processing technique: <ul style="list-style-type: none"> <li>• Composition of milk and quality parameters</li> <li>• Cleanliness &amp; hygiene of milk production</li> <li>• Filtration and pasteurization</li> <li>• Cooling, chilling, packaging &amp; storage</li> </ul>
	4.5	<b>Exotic breeds:</b> Jersey and Holstein	4.5 Milk and milk products Composition of milk Types of milk: A. Buffalo milk and Cow milk (a1 and a2) B. Whole milk and toned milk (Changes suggested by Dr. G. D. Khedkar, Dr. Yogesh Karpe, Dr. D. M. Sangale & Dr. V. B. Nale)



**USZL 233: Zoology Practical-III**

<b>Sr. No.</b>	<b>SUGGESTED TITLE OF THE PRACTICAL</b>	<b>SUGGESTIONS FROM BOS MEMBERS</b>
1	To study the classification up to class with reasons of the following: Phylum Arthropoda- Butterfly, Scorpion. Phylum Mollusca- Pila, Octopus. Phylum Echinodermata – Sea star, Feather star.	Classification of following taxa to their class level with reasons: Phylum Arthropoda- Butterfly, Scorpion. Phylum Mollusca- Pila, Octopus. Phylum Echinodermata – Sea star, Feather star. (Changes suggested by Dr. G. D. Khedkar)
2	Culturing of cockroach (Activity based).	Use appropriate suitable word for culturing (Changes suggested by Dr. G. D. Khedkar)
3	Study of external morphology and sexual dimorphism and digestive system of cockroach	Study of morphology, sexual dimorphism and digestive system of cockroach (Changes suggested by Dr. Yogesh Karpe)
4	Study of nervous system of cockroach	
5	Study of Male & Female Reproductive system of cockroach	Study of reproductive system of cockroach (Changes suggested by Dr. Yogesh Karpe)
6.	Temporary / Permanent mountings of a) Cornea b) Thoracic spiracles c) Gizzard	
7.	Identification, Classification and study of habit, habitat and economic importance of the following a) Rohu b) Catla c) Mrigal	Taxonomic classification, habit and economic importance of following fishes: a) Rohu b) Catla c) Mrigal (Changes suggested by Dr. G. D. Khedkar)
8.	Study of insect pests with respect to marks of identification, nature of damage and economic importance a) Jowar stem borer b) Rice weevil	Study of insect pests with respect to marks of identification, nature of damage and control measures of: a) Jowar stem borer b) Cotton ball worm (Changes suggested by Dr. G. D. Khedkar, Dr. V. B. Nale, Mr. Kishor More & Mr. M. S. Shitole)
9.	Extraction of casein from milk and its confirmatory test.	
10.	Measurement of density of milk using different samples by Lactometer	
11.	Estimation of primary productivity in aquatic ecosystem by using Light and dark bottle method.	
12	Submission of short project report on Economics of Fishery/Agricultural pests/ Pearl culture/Dairy (Activity based practical) (with necessary pictures).	Submission of short project report on Economics of Aquaculture/ Pearl culture/Dairy (Activity based practical). (Changes suggested by Dr. G. D. Khedkar & Dr. V. B. Nale)
13.	Compulsory visit to Biodiversity spot/Fishery farm/Dairy farm /Aquaculture and submit report of the same.	Compulsory visit to Biodiversity spot /Dairy farm /Aquaculture farm and submission of detailed visit report is compulsory. (Changes suggested by Dr. G. D. Khedkar & Mr. S. P. Chordiya)

**03) To prepare and approve curriculum of M.Sc. (Zoology) Semester-III (2022 pattern) to be implemented from the academic year 2022-2023.**

**Resolution # 03:** Curriculum of M.Sc. (Zoology) Semester-III (2022 pattern) was discussed thoroughly and as per discussion, the curriculum was finalized and accepted unanimously. Finalised copy of the syllabus is submitted to academic council.

**04) To discuss & approve the curriculum of new certificate courses.**

**Resolution #04:** There was not any proposed certificate course.

**05) To discuss amendments (if any) in the curriculum (F.Y.B.Sc. Sem-II and M.Sc. Sem-II) finalized in previous meeting.**

**Resolution # 04:** There were no any changes in the previously defined syllabi.

**06) To discuss and incorporate the relevant feedbacks of the stakeholders (students, teachers, parents, alumni and employers) in the curriculum.**

**Resolution # 05:** All the suggestions from feedback were discussed thoroughly and relevant suggestions were accepted unanimously.

**07) Any other issue with the permission of the chair**

There was no any incidental issue. Hence, the meeting was concluded with vote of thanks.

The vote of thanks was proposed by Dr. Vitthal Nale.

**Chairman  
Board of Studies**

**IQAC  
Coordinator  
Coordinator  
Internal Quality Assurance Cell  
Tuljaram Chaturchand College of  
Arts, Science and Commerce,  
Baramati (Pune)-413102**

**Principal  
Principal  
Tuljaram Chaturchand College  
Baramati**

