



**Minutes of the Board of Studies Meeting of the Department of
Zoology held on 4th February, 2019 at 9.00 am**

Ref. No. ZOOL/BOS/2018-19/13

Members of Board of Studies of Zoology

- 1) **Dr. S. Mary Mettilda Bai** **Chairman**
Head of the Department of Zoology
Holy Cross College (Autonomous),
Nagercoil, 629 004.
- 2) **Dr. S. Suthakar Issac** **University Nominee**
Associate Professor,
Department Zoology,
St. John's College,
Palayamkottai
- 3) **Dr. Priyatharshini Rajendran** **Subject Expert**
Associate Professor,
Department Zoology,
Lady Doak College (Autonomous),
Madurai- 625 002.
- 4) **Dr. S. Suthakar** **Subject Expert**
Professor,
Department of Biotechnology,
M.S. University,
Tirunelveli
- 5) **Dr. S. Leena** **Alumna**
Assistant Professor
Department Zoology,
Scott Christian College,
Nagercoil- 629 001.
- 6) **Dr. K.P. Srinivasakumar,** **Industrialist**
Director, INBIOTICS
William Hospital Campus,
Nagercoil, 629 001

7) **Department Members**

Dr. Sr. M.R. Basil Rose,
Principal

Dr. F. Brisca Renuga,
Associate Professor

Dr. J. Vinoliya Josephine Mary,
Assistant Professor

Dr. A. Shyla Suganthi,
Assistant Professor

Dr. P.T. Arokya Glory,
Assistant Professor

Dr. Jeni Chandar Padua,
Assistant Professor

Dr. C. Josephine Priyatharshini,
Assistant Professor

Dr. A. Punitha,
Assistant Professor

Dr. X. Venci Candida,
Assistant Professor

Dr. S. Prakash Shoba,
Assistant Professor

The following member is absent for the meeting

Dr. S. Suthakar Issac

University Representative

The 13th meeting of the Board of Studies "ZOOL/BOS/2018-19/13" commenced with the welcome by the Chairman Dr. S. Mary Mettilda Bai, followed by the reading of the minutes of the 2017-2018 Board. The activities and the progress of the Department were presented. The members of BOS expressed their appreciation and satisfaction about the activities of the Department.

Agenda of the Meeting

1. Prayer
2. Welcome by the Chairperson
3. Reading of the minutes of the previous meeting
4. Restructuring / Revision of Curriculum of UG
5. Changes / Modification of Curriculum
6. Classification of New Courses
7. Classification of courses as Employability / Entrepreneurship / Skill Development
8. Classification of courses as Local / National / Regional / Global
9. Classification of courses as Crosscutting Issues Gender Equity / Environment and Sustainability / Human Values / Professional Ethics
10. List of Value-Added Courses
11. Online Course.
12. New measures to be undertaken by the department
13. Feedback and action taken
14. Next Meeting of BoS
15. Any other.

The following items in the agenda were discussed by the members of the Board:

Item 01/17.03/03: Approval of the minutes of the previous meeting held on 22.01.2018:

Dr. Mary Mettilda Bai, Chairperson read the minutes of the 12th Board of Studies meeting and it was approved by the members.

Item 02/17.03/04: Approval of the Restructuring / Revision of Curriculum of UG

The structure for V & VI semester was approved by the board.

Distribution of Hours and Credits

Course	Sem. I	Sem. II	Sem. III	Sem. IV	Sem. V	Sem. VI	Total	
							Hours	Credits
Language	6(3)	6(3)	6(3)	6(3)	-	-	24	12
English	6(3)	6(3)	6(3)	6(3)	-	-	24	12
Major Core - Theory	4(4)	4(4)	4(4)	4(4)	6 (5) + 6 (5) + 5 (4)	6 (5) + 6 (5) + 5 (5)	50	45
Major Core - Practical	2	2(4)	2	2(4)	2 + 2 + 2	2 + 2 + 2 (6)	20	14
Elective	-	-	4 (4)	4(4)	5 (5)	5 (4)	18	17
Allied - Theory	4(4)	4(4)	4(4)	4(4)	-	-	16	16
Allied - Practical	2	2(2)	2	2(2)	-	-	8	4

AECC	2(2)	2(2)	-	-			4	4
SBC	-	-	2(2)	2(2)	2(2)	2(2)	8	8
NMEC	4(2)	4(2)	-	-			8	4
* FC – I (Values for Life)	-	(1)	-	-	-	-	-	1
* FC – II (Personality Development)	-	-	-	(1)	-	-	-	1
* FC – III (HRE)					(1)			1
* FC – IV (WS)						(1)		1
* SDP - Certificate Course	-	(1)	-	-	-	-		1
* SLP – Extension Activity (RUN)	-	-	(1)	-	-	-		1
* STP – Clubs & Committees / NSS	-	-	-	(1)	-	-		1
Total	30(18)	30(26)	30(21)	30(28)	30(22)	30(28)	180	140 + 3

Item 03/17.03/05: Approval of the Changes / Modification of Curriculum: B.Sc. V and VI semester revised syllabus of Core courses, Elective Courses and Skill Based courses were approved by the board with following modifications.

Semester	Part	Course code	Course	Course	Hours/week
V	Part III	ZC1751	Major Core V - Physiology	6	5
		ZC1752	Major Core VI – Developmental Zoology	6	5
		ZC1753	Major Core VII - Ecology and Toxicology	5	4
			Major – Elective III	5	5
		ZC1754	(a) Aquaculture /		
		ZC1755	(b) Sericulture/		
		ZC1756	(c) Marine Biology		
		ZC17P5	Major Practical V (Physiology & Developmental Zoology)	4	-
		ZC17P6	Major Practical VI (Ecology and Toxicology & Evolutionary Biology)	2	-
		Part IV	ZSK175	* SBC - Vermitechnology	2
	HRE175		Foundation Course III	-	1
			- Human Rights Education (HRE)		
	VI	Part III	ZC1761	Major Core VIII - Biotechnology	6
ZC1762			Major Core IX - Immunology and Microbiology	6	5
ZC1763			Major Core X - Evolutionary Biology	5	5

		Major – Elective IV	5	4
	ZC1764	(a) Applied Zoology /		
	ZC1765	(b) Poultry Science /		
	ZC1766	(c) Pest Management		
	ZC17P5	Major Practical V (Physiology & Developmental Zoology)	-	2
	ZC17P6	Major Practical VI (Ecology and Toxicology & Evolutionary Biology)	2	2
	ZC17P7	Major Practical VII (Biotechnology & Immunology and Microbiology)	4	2
Part IV	ZSK176	* SBC - Project	2	2
	WSC176	Foundation Course IV - Women's Studies (WS)	-	1

*** SBC for the V & VI semesters is offered by the Departments for their students**

There is a subject oriented Skill based course during the V semester and a subject based group project (with 5 students per group) during the VI semester for two hours each per week. There will be an individual viva voce for the group project.

Semester	Subject code	Title of the paper	Hours / week	Credits
III / V	ZC17S1	Ornamental Fish Culture	-	2
IV / VI	ZC17S2	Nutrition and Dietetics	-	2

Following are the modifications:

- The Course Animal Physiology (ZC1751): The syllabus of the course is updated based on the feedback of stakeholders.
 - Unit I –Types of Nutrition, Basal metabolic rate and Body mass index, Physiology of ruminating stomach (added), Metabolism (deleted).
 - Unit II –Respiratory organs (added).
 - Unit III –Blood Composition, excretory organs in invertebrates(added), Bioluminescence(deleted)
 - Unit IV –Reflex action. Receptors: Types, Physiology of photoreception and Phonoreception (added).
 - Unit V –Hormones and Pheromones, Biological clock and biological rhythms(added).
- The course, Developmental Zoology (ZC1752) is updated by introducing the following topics in the respective Units.
 - Unit II - Stem cells and transplantation
 - Unit III - Placental preservation
 - Unit IV - Regeneration of human liver
 - Unit V – Causes of Infertility and diagnostic parameters of infertility, hormonal Imbalance and Polycystic Ovarian Disease. Hormonal and therapeutic methods.
- The course Ecology and Toxicology (ZC1753) is updated to give more importance to employability and cross cutting issues like Environmental sustainability.

Unit IV - Regeneration of human liver

Unit V – Causes of Infertility and diagnostic parameters of infertility, hormonal Imbalance and Polycystic Ovarian Disease. Hormonal and therapeutic methods.

3. The course Ecology and Toxicology (ZC1753) is updated to give more importance to employability and cross cutting issues like Environmental sustainability

Unit IV – Environmental Auditing and Environmental Impact Assessment (EIA)

Unit V – Toxic effects of Micro plastics and Environmental Risk Assessment (ERA)in pharmaceutical industry

4. Aquaculture (ZC1754) is modified by including the locally / regionally/ globally relevant topics in the respective Units.

Unit III - *Spirulina* culture

Unit IV -Genetically modified species of fishes

Unit V - Fish storage and preservation techniques, natural and derived aqua products

5. The course Sericulture (ZC1755) updated by including the following topic

Unit III –Nucleo Polyhedral Viral (NPV) Disease

6. Marine Biology (ZC1756): The syllabus of the course is revised and modified.

7. The course Vermitechnology (ZSK175) is modified by giving more importance to Entrepreneurship.

Unit V- Vermi-remediation, financial support by Government and Non- Government funding agencies

8. The course Biotechnology (ZC1761) is updated by including current advancements in Biotechnology.

Unit I – 3D culture – *Invitro* organ development

Unit IV – Genome editing – CRISP, Next Generation sequencing techniques, Maxam Gilbert's method (deleted).

Unit V –SNP's for mutations

9. The course Immunology and Microbiology (ZC1762) is modified and updated by the following changes.

Unit I – Vaccines and immunization schedule is shifted from Unit I to Unit III.

Lymphoid and myeloid lineage and cells of immune system is shifted from Unit II to Unit I.

Unit II – Secondary antibody, purification of antibody using protein A/G is added.

Unit IV – Synthetic Biology is added.

10. The course Pest Management (ZC1766) is updated by including Virus-mediated pest control in Unit V.

11. In the Core Practical, Biotechnology, Immunology & Microbiology (ZC17P7) “Isolation of B and T lymphocytes using kits” is added.

12. In Value added courses – First Aid - Section I – Cardiac Pulmonary Resuscitation (CPR) is added.

13. Recently edited standard books are recommended as the Text and Reference books for all the courses.

Item 04/17.03/06: Approval of the new courses: The Board approved the courses with more than 20 to 87 % of revision as new courses.

Part	Course Code	Courses
Part III	ZC1751	Major Core V - Physiology
	ZC1752	Major Core VI – Developmental Zoology
	ZC1753	Major Core VII - Ecology and Toxicology
	ZC1754	Major – Elective III (a) Aquaculture
	ZC1756	(c) Marine Biology
Part III	ZC1761	Major Core VIII - Biotechnology
	ZC1762	Major Core IX - Immunology and Microbiology
	ZC1763	Major Core X - Evolutionary Biology
	ZC1764	Major – Elective IV (a) Applied Zoology
	ZC1765	(b) Poultry Science

Item 05/17.03/07: Approval of the courses classified based on Employability (EM)/Entrepreneurship (EN)/ Skill Development (SD). The following courses were approved by the Board as direct bearing Employability/Entrepreneurship/ Skill development

Part	Course Code	Courses	EM	EN	SD
Part III	ZC1751	Major Core V - Physiology	✓	-	-
	ZC1752	Major Core VI – Developmental Zoology	✓	-	-
	ZC1753	Major Core VII - Ecology and Toxicology	✓	-	-
	ZC1754	Major – Elective III (a) Aquaculture	-	✓	✓
	ZC1755	(b) Sericulture	-	✓	✓

	ZC1756	(c) Marine Biology	✓		-
	ZC17P5	Major Practical V (Physiology & Developmental Zoology)	✓	-	✓
	ZC17P6	Major Practical VI (Ecology and Toxicology & Evolutionary Biology)	✓	-	✓
Part IV	ZSK175	* SBC - Vermitechnology			✓
	HRE175	FCIII -Human Right Education (HRE)			
Part III	ZC1761	Major Core VIII - Biotechnology	✓	-	-
	ZC1762	Major Core IX - Immunology and Microbiology	✓	-	-
	ZC1763	Major Core X - Evolutionary Biology	✓		-
	ZC1764	Major – Elective IV (a) Applied Zoology	-	✓	-
	ZC1765	(b) Poultry Science	-	✓	-
	ZC1766	(c) Pest Management	✓	-	-
	ZC17P5	Major Practical V (Physiology & Developmental Zoology)	-	-	✓
	ZC17P6	Major Practical VI (Ecology and Toxicology & Evolutionary Biology)	-	-	✓
	ZC17P7	Major Practical VII (Biotechnology & Immunology and Microbiology)	-	-	✓
Part IV	ZSK176	* SBC – Project	-	-	✓

Item 06/17.03/08: Approval of the Classification of courses as Local / National / Regional / Global needs: The board approved the following courses which have relevance to local/ Regional/ National / Global developmental needs.

Part	Course Code	Courses	Local	Regional	National	Global
Part III	ZC1751	Major Core V – Animal Physiology	✓	-	✓	✓
	ZC1752	Major Core VI – Developmental Zoology	✓	✓	✓	✓
	ZC1753	Major Core VII - Ecology and Toxicology	✓	✓	✓	✓
	ZC1754	Major – Elective III (a) Aquaculture	✓	-	✓	-
	ZC1755	(b) Sericulture	✓	✓	✓	✓
	ZC1756	(c) Marine Biology			✓	
	ZC17P5	Major Practical V (Physiology & Developmental Zoology)	✓	✓	-	✓
	ZC17P6	Major Practical VI (Ecology and Toxicology & Evolutionary Biology)	✓	✓	✓	✓
Part IV	ZSK175	* SBC - Vermitechnology	✓	✓	✓	

	HRE175	FCIII Human Right Education				
Part III	ZC1761	Major Core VIII - Biotechnology	✓	✓	✓	✓
	ZC1762	Major Core IX - Immunology and Microbiology	✓	✓	✓	✓
	ZC1763	Major Core X - Evolutionary Biology	✓	✓	✓	✓
	ZC1764	Major – Elective IV (a) Applied Zoology	✓	✓	✓	✓
	ZC1765	(b) Poultry Science	✓	✓	✓	
	ZC1766	(c) Pest Management	✓	-	-	
	ZC17P5	Major Practical V (Physiology & Developmental Zoology)	✓	✓	-	✓
	ZC17P6	Major Practical VI (Ecology and Toxicology & Evolutionary Biology)	✓	✓	✓	✓
	ZC17P7	Major Practical VII (Biotechnology & Immunology and Microbiology)	✓	✓	✓	✓
Part IV	ZSK176	* SBC – Project -	-	-	-	-

Item 07/17.03/09: Approval of classification of courses as Crosscutting Issues Gender Equity (GE) / Environment and Sustainability (EVS)/ Human Values (HV) / Professional Ethics (PE). The Board approved it.

Part	Course Code	Courses	GD	EVS	HV	PE
Part III	ZC1751	Major Core V - Animal Physiology	✓		✓	✓
	ZC1752	Major Core VI – Developmental Zoology	✓		✓	✓
	ZC1753	Major Core VII - Ecology and Toxicology		✓	✓	
	ZC1754	Major – Elective III (a) Aquaculture		✓		
	ZC1755	(b) Sericulture		✓		
	ZC1756	(c) Marine Biology		✓	✓	
Part IV	ZSK175	* SBC - Vermitechnology		✓		
	HRE175	FCIII - Human Right Education (HRE)			✓	
Part III	ZC1761	Major Core VIII - Biotechnology			✓	✓
	ZC1762	Major Core IX - Immunology and Microbiology			✓	
	ZC1763	Major Core X - Evolutionary Biology			✓	
	ZC1764	Major – Elective I: (a) Applied Zoology		✓	✓	
	ZC1765	(b) Poultry Science		✓	✓	
	ZC1766	(c) Pest Management		✓	✓	
Part IV	ZSK176	* SBC – Project	✓	-	-	✓
	WSC176	Foundation Course IV- Women's studies (WS)	✓			

Item 08/17.03/10: Approval of Value-Added Courses: First aid, Household waste management, Poultry, Silkworm rearing Technology, Ecofriendly Products of Sericultural wastes, Culture of Freshwater Organisms, Culture of Fish Feed Organisms, Fish Processing and Value-added products) for UG programme and Techniques in Biology, Chromatography and

Electrophoretic Techniques, Maternal and Child Health Management and Disaster Management) for PG programme are approved.

Item 09/17.03/11: Approval of Online Course.

The Board approved the online courses (MOOC)

Item 08/17.03/10: Approval of the analysis of feedback received from stakeholders

Stakeholders	Suggestion	Action taken
Students	<ul style="list-style-type: none"> • Update the syllabus. • Metabolism is repeated as it was included in biochemistry. • Marine Biology is very tough. • Practical examination for each semester. 	<p>The syllabus is modified and updated.</p> <p>Implemented</p>
Academic Peer	Vaccination schedule can be included in immunology	Immunization schedule is shifted from Unit I to Unit III.

The followings suggestions were given by the students:

Physiology and Marine Biology courses can be reframed.

Name: Asiba Shibani J (III B.Sc. Zoology)

Sr. Jisha James (II M.Sc. Zoology)

Asiba
Jisha James

Item 09/17.03/11: Any other matters:

The Board suggested the following:

- The Board approved to conduct practical examination as when completed.
- The BOS members suggested to market Vermicompost through commercialization among neighboring farmers, nurseries by having a function within the campus. Resolved the syllabus of V and VI semester including the Value-added Courses and the courses relevant to local/Regional/National/Global, addressing the Employability/Entrepreneurship/Skill development and the cross-cutting issues such as environmental sustainability/ Human Values/ Gender discrimination / Professional ethics is approved by the Members of Board of Studies.

ZOOL/BOS/2018-19/13

Minutes of the meeting of The Board of Studies held at 9.00 am on 4th February, 2019 in the Department of Zoology, Holy Cross College (Autonomous) Nagercoil, 629 004.

The following are the members of Board of Studies of Zoology

- 1) **Dr. S. Mary Mettilda Bai**
Head of the Department of Zoology
Holy Cross College (Autonomous),
Nagercoil, 629 004.

Chairman

S. Mary Mettilda Bai
4/2/2019

- 2) **Dr. S. Suthakar Issac**
Associate Professor,
Department Zoology,
St. John's College,
Palayamkottai

University Nominee

- 3) **Dr. Priyatharshini Rajendran** ✓
Associate Professor,
Department Zoology,
Lady Doak College (Autonomous),
Madurai- 625 002.

Subject Expert

Priyatharshini Rajendran
4.2.19

- 4) **Dr. S. Suthakar**
Professor,
Department of Biotechnology,
M.S. University,
Trinelveli

Subject Expert

S. Suthakar
4/2/19

- 5) **Dr. S. Leena**
Assistant Professor
Department Zoology,
Scott Christian College,
Nagercoil- 629 001.

Alumna

S. Leena
4/2/19

- 6) **Dr. K.P. Srinivasakumar,**
Director, INBIOTICS
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Dr. X. Venci Candida,
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Dr. S. Prakash Shoba,
Assistant Professor

S. Prakash Shoba

The following member is absent for the meeting

Dr. S. Suthakar Issac

University Representative