

NALLAMUTHU GOUNDER MAHALINGAM COLLEGE (AUTONOMOUS)-POLLACHI

578	B.Sc. Botany	Major Practical - IV (For VI Sem Theory Papers)	22UBY615	2022
579	B.Sc. Botany	Project & Viva-voce	22UBY616	2022
580	B. Sc. Zoology	Non Major Elective I Practical Skill in Human Health	22UZY3N2	2022
581	B. Sc. Zoology	Skill based Elective -II Biofarming	22UZY6S3	2022
582	B. Sc. Zoology	Advanced Learner Course-II Zoology for competitive Exams	22UZY6AL	2022
583	B. Sc. Zoology	Project	22UZY616	2022
584	M.Sc. Mathematics	Core VI: Mathematical Statistics	22PMS206	2022
585	M.Com	Business Environment	22PCO102	2022
586	M.Com	Investment Management	22PCO2N1	2022
587	M.Com	Fundamentals of Marketing	22PCO2N2	2022
588	Tamil Aided	Tamil Paper I	22UTL101	2022
589	Tamil Aided	Tamil Paper II	22UTL202	2022
590	Tamil Aided	Tamil Paper III	22UTL303	2022
591	Tamil Aided	Tamil Paper IV	22UTL404	2022
592	B.A Tamil	IKKALA ILAKKIYAM	22UTM101	2022
593	B.A Tamil	ARA ILAKKIYAM	22UTM102	2022
594	B.A Tamil	Allied - I TAMILAGA VARALARUM PANBADUM	22UTM1A1	2022
595	B.A Tamil	SITRILAKKIYAM	22UTM204	2022
596	B.A Tamil	TAMIL ILAKKIYA VARALARU	22UTM2A2	2022
597	B.A Tamil	NANNOOL SOLLATHIGARAM	21UTM305	2022
598	B.A Tamil	BAKTHI ILAKKIYAM	21UTM306	2022
599	B.A Tamil	KAAPPIYANGAL	20UTM509	2022
600	B.A Tamil	SANGA ILAKKIYAM ETTUTHOGAI	20UTM613	2022
601	B.A Tamil	SANGA ILAKKIYAM PATHUPAATTU	20UTM614	2022
602	B.Sc Computer Science	Computing Fundamentals and C Programming	22UCS101	2022
603	B.Sc Computer Science	Allied-1: Mathematics(Statistical Methodes and Linear Algebra)	22UCS1A1	2022

BoS Minutes
Highlighted



Dr. R. MUTHUKUMARAN,
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PRINCIPAL
N.G.M. College, Pollachi - 642 001
Coimbatore District

DEPARTMENT ZOOLOGY

NALLAMUTHU GOUNDER MAHALINGAM COLLEGE

POLLACHI - 642001

37th Board of Studies Meeting in the Department of Zoology

4-06-2022 & Time: 10.00 am

Agenda

BoS / ZOO 37.1	:	Welcome address and Opening Remarks by Chairman, Board of studies in the DEPARTMENT ZOOLOGY
BoS / ZOO 37.2	:	Confirmation of the Minutes of the 36 th / Previous meeting of Board of studies in the zoology department held on 22-05-2021 and Action taken report of 12 th meeting of Board of studies
BoS / ZOO 37.3	:	37.3.1 Syllabus of I, II, III BSc Zoology under Regulation 2022
BoS / ZOO 37.4	:	Suggestion given by BOS Members
BoS / DC 37.5	:	Any other items

BoS/ZOO 37.1 WELCOME ADDRESS AND OPENING REMARKS BY CHAIRMAN, BOARD OF STUDIES IN THE DEPARTMENT ZOOLOGY

The Chairman, BoS of the Department Zoology welcomed and introduced the members of 37th Board of Studies and thanked each one of them for sparing their valuable time to attend the meeting.

BoS/ZOO 37.2 TO CONFIRM THE MINUTES OF 36th BOS MEETING HELD ON 22-05-2021. The minutes of the 36th Board of Studies meeting held on 25-02-2021 were communicated to the members. The comments received have been incorporated and placed for confirmation. The same was approved by the PREVIOUS ACADEMIC MEETING NO.11 Academic council.

BoS/ ZOO 37.3

The panel members gave the following suggestions and recommendations were shown in the table (**Percentage of Revision of B. Sc Zoology Syllabus under Regulation 2022**). The presented syllabus was accepted by the experts.

The members had a brainstorming discussion and interaction among themselves. After discussion, fruitful suggestions were incorporated appropriately in the Curriculum and Syllabi.

Based on the suggestions given by the members, BOS resolved to recommend the following to the Academic Council for further approval.

NALLAMUTHU GOUNDER MAHALINGAM COLLEGE

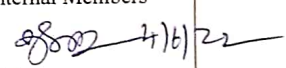
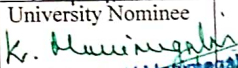
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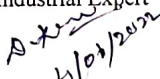
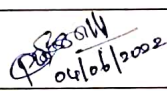
DEPARTMENT ZOOLOGY

MINUTES OF BOS MEETING

The 37th Meeting of the Board of studies of the DEPARTMENT ZOOLOGY was held on 04-06-2022 at 10.00 a.m. through online mode

1. The following members were present:

1	Dr. S.Somasundaram Assistant Professor and Head	Chairman 
2	Dr. M. Durairaju, Associate Professor	Internal Members  4/6/22  4/6/22  4/6/22  4/6/22
3	Dr. S. Mariselvi, Assistant Professor	
4	Ms. S. Jayalakshmi, Assistant Professor	
5	Dr. S. Christobher, Assistant Professor	
6	Dr. K. Manimegalai Professor & Head Dept of Zoology, Avinashilingam Institute for Home Science and Higher Education for Women Coimbatore – 641 043.	University Nominee  Dr. K. Manimegalai Professor and Head Department of Zoology Avinashilingam Institute for Home Science and Higher Education for Women Coimbatore - 641 043, Tamil Nadu, India.
7	Dr. Gokula. V Associate Professor & Head Dept. of Zoology, National College, Trichy	Academic Auditor  4/6/22 Dr. V. GOKULA Head & Associate Professor Research Department of Zoology National College (Autonomous) Trichinopoly - 620 001 Tamilnadu, India.

8	Dr. R. Eswaran , Assistant Professor , Dept. of Zoology , The Madurai College (Autonomous), T.P.K. Road, Madurai - 625 011	Subject Experts  4/6/2022
9	Ms. D. Karunambigai, Sr. Medical Representative, Moritz Health care, Pollachi.	Industrial Expert  4/6/2022
10	Ms. S. Punitha, M. Sc., Zoology	Alumnus nominated by Principal / HoD 
11.	Mr. Jaise K Jacob	Student Member 
12.	Ms. Mahimasankari.S.V	Student Member S.V. Mahimani


HoD
Dr. S. SOMASUNDARAM M.Sc., Ph.D.,
Assistant Professor and Head
Department of Zoology
Mallamabettu Gounder Mahalingam College
Pollachi - 642 001


CDC Co-ordinator
K. SRINIVASAN, M.C.A.
Co-ordinator
Curriculum Development Cell (CDC)
NGM College (Autonomous)
Pollachi - 642 001.


COE
Dr. R. MANICKA CHEZIAN, M.Sc., M.S., Ph.D.,
Controller of Examinations
NGM College (Autonomous)
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1.1.2 b) Percentage of Revision of B. Sc Zoology Syllabus under Regulation 2022

S.No	Course Code	Course Title	Content Deleted	Content Updated	Change details	% of Changes	Reason for Change
1.	22UZY 203	Core Lab-I Nonchordata and Chordata	Pigeon Synsacrum Salamander, Archaepteryx, Sepia, Platypus	Cockroach and Fish Dissection Mounting –Placoid Scale	Content Added	10%	Expert and Student Suggestion
2.	22UBY1A1	Allied -I Invertebrates and Vertebrates	Type Study- <i>Lamellidens</i>	Type Study- <i>Pila globosa</i>	Content Added	10%	Based on Faculty suggestion
3.	22UBY2A3	Allied-Lab-I Zoology Practical	-	Cockroach and Fish Dissection	Content Added	5%	Based on Faculty and Student suggestion

4.	22UZY304	Cell Biology	-	- Biogenesis of 80S Ribosomes(Unit – II)	Content added	5%	Experts suggestion Based on students feedback
5.	22UZY6E7	Aquaculture	Bionomics of some important aquatic animals	Bio-floc Technology application and animal food industry	Content added	10%	Based on students feedback


BOS chairman

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Department of Zoology

New Course Added: (IF ANY)- (2022-2023)

S.No	Year	Semester	Paper Code	% of Changes	Paper Title	Reason For Change
1.	2022-2025	III	22UZY 3N2	100 %	Practical skill in Human Health (Non-Major Elective)	Suggested by Faculty
2.	2022-2025	V	22 UZY 5VA	100 %	Animal Behaviour (Value Added Course)	Suggested by Faculty
3.	2022-2025	VI	22 UZY 6S3	100 %	Biofarming (Skill Based Elective)	Suggested by Faculty
4.	2022-2025	VI	22UZY6AL	100 %	Zoology for Competitive Exams (Advanced Learner Course)	Suggested by Alumni
5.	2022-2025	VI	22UZY 6VA	100 %	Basic concepts in Human Psychology (Value Added Course) course title alone changed	Suggested by Faculty
6.	2022-2025	VI	22UZY616	100 %	Project	Suggested by CDC

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List of Courses having focus on local, national, regional and global developmental needs offered by the Department of Zoology

S.No	Semester	Course Code	Name of the course	Local	National	Regional	Global
1.	I	22UZY101	Core - I :Nonchordata		√		
2.	I	22UBY1A1	Allied - I :Nonchordata and Chordata		√		
3.	II	22UZY202	Core - II :Chordata		√		
4.	II	22UZY203	Core Lab - I: Nonchordata & Chordata (Non-Semester Pattern)		√		
5.	II	22UBY2A2	Allied - II :Economic Zoology	√	√	√	
6.	II	22UBY2A3	Allied Lab : Paper I & II (Non-Semester Pattern)		√	√	
7.	II	22EVS201	Environmental Studies		√	√	√
8.	III	22UZY304	Core - III: Cell Biology		√		
9	III	22UZY3N1	Non Major Elective - I : Public Health and Hygiene	√	√		
10.	III	22UZY3N2	Non Major Elective - I : Clinical skills in human health	√	√	√	
11.	IV	22UZY405	Core - IV :Genetics				√
12.	IV	22UZY406	Core Lab - II : Cell biology & Genetics (Non-Semester Pattern)		√		
13.	IV	22UZY4N3	Non Major Elective - II :Food and Nutrition	√	√		
14.	IV	22UZY4N4	Non Major Elective - II : Ornamental Fish Culture	√			
15.	V	22UZY507	Core - V: Developmental Biology		√	√	
16.	V	22UZY508	Core - VI :Biotechnology		√	√	√

S.No	Semester	Course Code	Name of the course	Local	National	Regional	Global
			Skill Enhanced Course				
17.	V	22UZY509	Core - VII : Biostatistics & Biophysics		√	√	√
18.	V	22UZY510	Core - VIII : Biochemistry		√		
19.	V	22UZY5E1	Core Elective - I : Medical Laboratory Techniques	√	√	√	
20.	V	22UZY5E2	Core Elective - I : Poultry Science and Management	√	√	√	
21.	V	22UZY5E3	Core Elective - I : Haematology and Clinical Pathology	√	√	√	
22.	V	22UZY5AL	Advanced Learner Course – I Bioinformatics (Optional) - Self Study		√		√
23.	V	22UZY5S1	Skill Based Elective - I : Network and Information Security (Online)				√
24.	V	22UZY5S2	Skill Based Elective - I : Apiculture	√	√	√	√
25.	VI	22UZY611	Core - IX :Animal Physiology and endocrinology		√		
	VI	22UZY612	Core - X :Ecology and Evolution	√	√	√	√
26.	VI	22UZY613	Core - XI : Microbiology and Immunology -Skill Enhanced Course	√	√		
27.	VI	22UZY6E4	Core Elective - II : Sericulture	√	√	√	
28.	VI	22UZY6E5	Core Elective - II :Insect Pest Management	√	√	√	
29.	VI	22UZY6E6	Core Elective - II : Parasitology	√	√	√	
30.	VI	22UZY6E7	Core Elective - III :Aquaculture	√	√	√	
31.	VI	22UZY6E8	Core Elective - III : Wild life Conservation		√	√	

S.No	Semester	Course Code	Name of the course	Local	National	Regional	Global
32	VI	22UZY6E9	Core Elective -III Dairy farming and Management Technology	√	√	√	
33	VI	22UZY614	Core Lab- III : Developmental Biology, Animal Physiology & Endocrinology, Biostatistics & Biophysics, Biochemistr, MLT, Heamatology and Clinical pathology and Poultry Science and Management (Non-Semester Pattern)	√	√	√	
34	VI	22 UZY615	Core Lab- IV: Ecology, Evolution, Biotechnology, Microbiology, Sericulture, Insect pest management, Parasitology, Aquaculture, Dairy Farming and management technology and Wild life conservation (Non-Semester Pattern)	√	√	√	
35	VI	22UZY6AL	Advanced Learner Course - II Zoology for Competitive Exams (Optional) - Self Study		√		√
36	VI	22UZY6S3	Skill Based Elective - II : Biofarming	√	√	√	
37	VI	22UZY6S4	Skill Based Elective - II : Biopharmaceuticals		√	√	

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List of Courses having focus on employability/ entrepreneurship/ skill development offered by the Department Zoology

S.No	Semester	Course Code	Name of the course	Skill develop ment	Entrep reneur ship	Employabi lity	Year of Introducti on
1.	I	22UZY101	Core - I :Nonchordata	✓			1987
2.	I	22UBY1A1	Allied - I :Nonchordata and Chordata	✓	✓		1987
3.	II	22UZY202	Core - II :Chordata	✓			1987
4.	II	22UZY203	Core Lab - I: Nonchordata & Chordata (Non-Semester Pattern)	✓			1987
5.	II	22UBY2A2	Allied - II :Economic Zoology	✓			2018
6.	II	22UBY2A3	Allied Lab : Paper I & II (Non-Semester Pattern)	✓			1987
7.	II	22EVS201	Environmental Studies	✓			
8.	III	22UZY304	Core - III: Cell Biology	✓			1987
9	III	22UZY3N1	Non Major Elective - I : Public Health and Hygiene	✓			2004
10.	III	22UZY3N2	Non Major Elective - I : Clinical skills in human health	✓	✓	✓	2022
11.	IV	22UZY405	Core - IV :Genetics	✓			1987
12.	IV	22UZY406	Core Lab - II : Cell biology & Genetics (Non-Semester Pattern)	✓			1987
13.	IV	22UZY4N3	Non Major Elective - II :Food and Nutrition	✓			2004
14.	IV	22UZY4N4	Non Major Elective - II : Ornamental Fish Culture	✓	✓	✓	2004
15.	V	22UZY507	Core - V: Developmental Biology	✓			2019

S.No	Semester	Course Code	Name of the course	Skill develop ment	Entrep reneur ship	Employabi lity	Year of Introducti on
16.	V	22UZY508	Core - VI :Biotechnology Skill Enhanced Course	✓			1987
17.	V	22UZY509	Core - VII : Biostatistics & Biophysics	✓			1987
18.	V	22UZY510	Core - VIII : Biochemistry	✓		✓	2021
19	V	22UZY5E1	Core Elective - I : Medical Laboratory Techniques	✓		✓	1987
20.	V	22UZY5E2	Core Elective - I : Poultry Science and Management	✓	✓	✓	2011
21.	V	22UZY5E3	Core Elective - I : Haematology and Clinical Pathology	✓		✓	2021
22.	V	22UZY5AL	Advanced Learner Course – I Bioinformatics (Optional) - Self Study	✓			2021
23.	V	22UZY5S1	Skill Based Elective - I : Network and Information Security (Online)	✓			2019
24.	V	22UZY5S2	Skill Based Elective - I : Apiculture	✓	✓	✓	2019
25.	VI	22UZY611	Core - IX :Animal Physiology and endocrinology			✓	2019
	VI	22UZY612	Core - X :Ecology and Evolution	✓			1987
26.	VI	22UZY613	Core - XI : Microbiology and Immunology -Skill Enhanced Course			✓	1987
27.	VI	22UZY6E4	Core Elective - II : Sericulture	✓	✓	✓	1987
28.	VI	22UZY6E5	Core Elective - II :Insect Pest Management	✓		✓	2004
29.	VI	22UZY6E6	Core Elective - II : Parasitology	✓		✓	2021

S.No	Semester	Course Code	Name of the course	Skill develop ment	Entrep reneur ship	Employabi lity	Year of Introducti on
30	VI	22UZY6E7	Core Elective - III :Aquaculture	✓	✓	✓	1987
31	VI	22UZY6E8	Core Elective - III : Wild life Conservation	✓			2020
32	VI	22UZY6E9	Core Elective –III Dairy farming and Management Technology	✓	✓	✓	2004
33	VI	22UZY614	Core Lab- III : Developmental Biology, Animal Physiology & Endocrinology, Biostatistics & Biophysics, Biochemistr, MLT, Heamatology and Clinical pathology and Poultry Science and Management (Non-Semester Pattern)	✓		✓	1987
34	VI	22 UZY615	Core Lab- IV: Ecology, Evolution, Biotechnology, Microbiology, Sericulture, Insect pest management, Parasitology, Aquaculture, Dairy Farming and management technology and Wild life conservation (Non-Semester Pattern)	✓		✓	1987
35	VI	22UZY6AL	Advanced Learner Course - II Zoology for Competative exams - Self Study	✓			2021
36	VI	22UZY6S21	Skill Based Elective - II : Biofarming	✓	✓	✓	2011
37	VI	22UZY6S22	Skill Based Elective - II : Biopharmaceuticals	✓		✓	2004

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Nallamuthu Gounder Mahalingam College - Curriculum Development Cell
B. Sc. Zoology Scheme of Examination For (2022 – 2025Batch),
Choice Based Credit System & OBES

For Part I and Part II for Four Semesters

SEMESTER – I

Part	Subject Code	Title of the Paper	Hrs / Week		Hrs / Sem.	Exam Hrs.	Maximum Marks		Total Marks	Credits
			L	P	T		Internal	External		
I	22UTL101 / 22UHN101 / 22UFR101	Tamil Paper - I /	6	-	-	3	50	50	100	3
		Hindi Paper - I /		-	-					
		French Paper – I		-	-					
II	22UEN101	Communication Skills - I (Level I)	5	-	-	3	50	50	100	3
	22UEN102	Communication Skills - I (Level II)		-	-					
III	22UZY101	Core - I :Nonchordata	6	-	-	3	50	50	100	5
		Core Lab -I : Nonchordata and Chordata (Non semester pattern)	-	3	-	-	-	-	-	-
	22UBY1A1	Allied - I :Allied Botany Paper I: Invertebrates and Vertebrates	6	-	-	3	50	50	100	4
		Allied Lab -I : Practical I (Paper I &II)	-	2	-	-	-	-	-	-
IV	22UHR101	Human Rights	1	-	-	2		50	50	2
	22HEC101	Human Excellence - Personal Values & SKY Yoga Practice – I	1	-	-	2	25	25	50	1
V		Extension Activities – Annexure I	-	-	-	-	-	-	-	-
CC	22CFE101	Fluency in English-I	-	-	-	-	-	-	-	-
		Online Course (Optional) (MOOC/NPTEL/SWAYAM)								Grade
Total									500	18

SEMESTER – II

Part	Subject Code	Title of the Paper	Hrs / Week	Hrs / Sem.	Exam Hrs.	Maximum Marks	Total Marks	Credits
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			L	P	T		Internal	External		
I	22UTL202 / 22UHN202 / 22UFR202	Tamil Paper - II /	6	-	-	3	50	50	100	3
		Hindi Paper - II /		-	-					
		French Paper – II		-	-					
II	22UEN202	Communication Skills - II (Level I)	5	-	-	3	50	50	100	3
	22UEN203	Communication Skills - II (Level II)		-	-					
III	22UZY202	Core - II :Chordata	6	-	-	3	50	50	100	4
	22UZY203	Core Lab - I: Nonchordata & Chordata (Non-Semester Pattern)	-	2	-	3	50	50	100	4
	22UBY2A2	Allied - II :Economic Zoology	6	-	-	3	50	50	100	4
	22UBY2A3	Allied Lab : Paper I & II (Non-Semester Pattern)	-	2	-	3	50	50	100	2
IV	22EVS201	Environmental Studies	2	-	-	2		50	50	2
	22HEC202	Human Excellence - Family Values & SKY Yoga Practice – II	1	-	-	2	25	25	50	1
V		Extension Activities - Annexure I	-	-	-	-	-	-	-	-
CC	22CFE202	Fluency in English-II	-	-	-	-	-	-	-	-
	22CMM201	Manaiyiyal Mahathuvam-I	1	-	-	2	-	50	50	Grade
	22CUB201	Uzhavu Bharatham-I	1	-	-	2	-	50	50	Grade
		Online Course (Optional) (MOOC/NPTEL/SWAYAM)								Grade
Total									700+ 100*	23

SEMESTER – III

Part	Subject Code	Title of the Paper	Hrs / Week		Hrs / Sem.	Exam Hrs.	Maximum Marks		Total Marks	Credits
			L	P	T		Internal	External		
I	22UTL303 / 22UHN303 / 22UFR303	Tamil Paper - III /	5	-	-	3	50	50	100	3
		Hindi Paper - III/								
		French Paper – III								
II	22UEN303	Communication Skills - III (Level I)	6	-	-	3	50	50	100	3
	22UEN304	Communication Skills - III (Level II)		-	-					
III	22UZY304	Core - III:Cell Biology	6	-	-	3	50	50	100	5
		Core –Lab II: Cell biology & Genetics (Non-Semester Pattern)	-	3	-	-	-	-	-	-
	22UZY3A4	Allied - III :Ancillary Chemistry (offered by Department of Chemistry)	6	-	-	3	50	50	100	4
		Allied Lab - II : Chemistry(offered by Department of Chemistry)	-	2	-	-	-	-	-	-
IV	22UZY3N1 / 22UZY3N2	Non Major Elective - I : Public Health and Hygiene/ Non Major Elective - I : Practical skills in Human Health	1	-	-	2		50	50	2
	22HEC303	Human Excellence - Professional Values & Ethics – III	1	-	-	2	25	25	50	1
V		Extension Activities - Annexure I	-	-	-	-	-	-	-	-
CC	22CFE303	Fluency in English-III	-	-	-	-	-	-	-	-
	22CMM302	Manaiyiyal Mahathuvam-II	1	-	-	2	-	50	50	Grade
	22CUB302	Uzhavu Bharatham-II	1	-	-	2	-	50	50	Grade
Total									500+ 100*	18

SEMESTER – IV										
Part	Subject Code	Title of the Paper	Hrs / Week		Hrs / Sem.	Exam Hrs.	Maximum Marks		Total Marks	Credits
			L	P	T		Internal	External		
I	22UTL404 / 22UHN404 /	Tamil Paper - IV /	5	-	-	3	50	50	100	3
		Hindi Paper - IV/								

	22UFR404	French Paper – IV								
II	22UEN404	Communication Skills - IV (Level I)	6	-	-	3	50	50	100	3
	22UEN405	Communication Skills - IV (Level II)		-	-					
III	22UZY405	Core - IV :Genetics	6	-	6	3	50	50	100	5
	22UZY406	Core Lab - II : Cell biology & Genetics (Non-Semester Pattern)	-	3	-	3	50	50	100	4
	22UZY4A5	Allied - IV :Ancillary chemistry Paper II(offered by Department of Chemistry)	6	-	-	3	50	50	100	4
	22UZY4A6	Allied Lab-II:Chemistry (offered by Department of Chemistry)	-	2	-	3	50	50	100	2
IV	22UZY4N3/ 22UZY4N4	Non Major Elective - II :Food and Nutrition / Non Major Elective - I : Ornamental Fish Culture	1	-	-	2		50	50	2
	22HEC404	Human Excellence - Social Values & SKY Yoga Practice – IV	1	-	-	2	25	25	50	1
V		Extension Activities - Annexure I	-	-	-	-	-	50	50	1
CC	22CFE 404	Fluency in English-IV	-	-	-	-	-	-	-	-
	22CMM403	Manaiyiyal Mahathuvam-III	1	-	-	2	-	50	50	Grade
	22CUB403	Uzhavu Bharatham-III	1	-	-	2	-	50	50	Grade
Total									750+ 100*	25

SEMESTER – V

Part	Subject Code	Title of the Paper	Hrs / Week		Hrs /Sem.	Exam Hrs.	Maximum Marks		Total Marks	Credits
			L	P			Internal	External		
III	22UZY507	Core - V: Developmental Biology	5	-	-	3	50	50	100	4
	22UZY508	Core - VI :Biotechnology		-	-	3	50	50	100	4

		Skill Enhanced Course	5							
	22UZY509	Core - VII : Biostatistics & Biophysics	5	-	5	3	50	50	100	4
	22UZY510	Core - VIII : Biochemistry	5	-	-	3	50	50	100	4
	22UZY5E1 / 22UZY5E2 / 22UZY5E3	Core Elective - I : Medical Laboratory Techniques/ Core Elective - I : Poultry Science and Management Core Elective - I : Haematology and Clinical Pathology	4	-	-	3	50	50	100	4
	22UZY614	Core Lab- III: Developmental Biology, Animal Physiology & Endocrinology, Biostatistics & Biophysics, biochemistry & MLT (Non-Semester Pattern)	-	2	10	-	-	-	-	-
	22UZY615	Core Lab- IV: Ecology, Evolution, Biotechnology, Microbiology , Sericulture and Aquaculture (Non-Semester Pattern)	-	2	-	-	-	-	-	-
	22UZY5AL	Advanced Learner Course – I Bioinformatics (Optional) - Self Study					50	50	100*	5*
	22UZY 5VA	Value Added Course - Animal Behaviour (Optional)	30					50	50*	2*
IV	22UZY5S1 / 22UZY5S2	Skill Based Elective - I : Network and Information Security (Online)/ Skill Based Elective - I II : Apiculture	1			2		50	50	2
	22HEC505	Human Excellence - National Values & SKY Yoga Practice – V	1	-	-	2	25	25	50	1
	22GKL501	General Awareness - Self Study	SS			2	-	50*	50*	Grade
V		Extension Activities - Annexure I	-	-	-	-	-	-	-	-
CC	22CFE505	Fluency in English-V	-	-	-	-	-	-	-	-
	22CSD501	SoftSkills Development -I	-	-	-	-	-	-	-	Grade
Total									600+200*	23+7*

SEMESTER – VI										
Part	Subject Code	Title of the Paper	Hrs / Week	Hrs / Sem.		Ex am Hr s.	Maximum Marks		Total Marks	Credits
			L	P	T		Internal	External		
III	22UZY611	Core - IX :Animal Physiology and endocrinology	5	-	-	3	50	50	100	4
	22UZY612	Core - X :Ecology and Evolution	5	-	-	3	50	50	100	4
	22UZY613	Core - XI : Microbiology and Immunology -Skill Enhanced Course	5	-	-	3	50	50	100	4
	22UZY6E4/ 22UZY6E5/ 22UZY6E6	Core Elective - II : Sericulture/ Core Elective - II :Insect Pest Management / Core Elective - II : Parasitology	4	-	-	3	50	50	100	4
	22UZY6E7 / 22UZY6E8 / 22UZY6E9	Core Elective - III :Aquaculture / Core Elective - III : Wild life Conservation/ Core Elective –III Dairy farming and Management Technology	5	-	-	3	50	50	100	4
	22UZY614	Core Lab- III : Developmental Biology, Animal Physiology & Endocrinology, Biostatistics &Biophysics, Bioinformatics &Biochemistry & MLT (Non-Semester Pattern)	-	2	10	3	50	50	100	4
	22 UZY615	Core Lab- IV: (Non-Semester Pattern) Ecology, Evolution, Biotechnology, Microbiology , Sericulture and Aquaculture	-	2	-	3	50	50	100	4
	22UZY616	Project	-	-	-	-	25	25	50	2
	22UZY6AL	Advanced Learner Course - II Zoology for Competitive Exams (Optional) - Self Study					50	50	100*	5*
	22UZY6VA	Value Added Course-Basic concepts in Human Psychology (Optional)	30	-	-	-	-	50	50*	2*
IV	22UZY6S3/ 22UZY6S4	Skill Based Elective - II : Biofarming /	1			2		50	50	2

		Skill Based Elective - II : Biopharmaceuticals								
	22HEC606	Human Excellence - Global Values & SKY Yoga Practice – VI	1	-	-	2	25	25	50	1
V		Extension Activities - Annexure I	-	-	-	-	-	-	-	-
CC	22CFE606	Fluency in English-VI	-	-	-	-	-	-	-	-
	22CSD602	Soft Skills Development - II	-	-	-	-	-	-	-	Grade
Total									850+150*	33+7*

AL - Advanced Learner Course (Optional) ; VA-Department Specific Value Added Course

CC – Certificate Course / Co-scholastic Course; *Extra Credits, Extra Hour Course

Grand Total = 3900; Total Credits = 140

Head of the Department

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Principal :-

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Programme Code:	B.Sc.,			Programme Title:	Bachelor of Zoology	
Course Code:	22UZY 3N2			Title	Batch:	2022 – 2025
Lecture Hrs./Week	1	Tutorial Hrs./Sem.	--	Non major Elective –I Practical skill in Human Health	Semester:	III
					Credits:	2

Course Objectives

To study the importance of health keep in mind the maintenance of our body

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	Remember the importance of laboratory test	K3
CO2	Understand the normal level of various human physiological parameters	K4
CO3	Apply the instruments used in biological experiment.	K5
CO4	Analyse the bleeding and clotting time of blood in individuals	K4
CO5	Evaluate the Knowledge of Blood grouping	K5

Mapping

PO /PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
CO1	M	L	L	L	H	M	H	H	H
CO2	H	M	M	L	M	H	H	H	M
CO3	M	M	M	M	H	M	H	M	H
CO4	M	M	M	H	H	H	H	H	H
CO5	M	M	M	M	H	M	H	H	H

Content

EXPERIMENTS

- Calculate the Body Mass Index
- Identify the Blood group of the individual
- Estimation of haemoglobin by using haemoglobinometer
- Preparation of Blood smear
- Bleeding time of blood
- clotting time of blood

Spotters

- Haemocytometer
- Albuminometer
- Automatic blood pressure monitor
- Urinometer
- Autoclave
- BP apparatus
- Stethoscope
- Glucometer

Total Contact Hrs

15 hours

Text Book

1. Dutta, A. Experimental Biology A laboratory manual. Narosa Publishing House , New Delhi. (2009)
2. Ramnik Sood, Medical Laboratory Techniques, 5th edition. Jaypee Brothers Medical publishers (P) Ltd. Delhi, . (1999)

Reference Books

1. Vandana Puri, Praveen Kr Gupta. Complex review of Pathology and Haematology for NBE . 6th edition, CBS publishers, Delhi (2020).
2. Ajmani PS. Handbook of Clinical Laboratory Techniques . AITBS Publisher , India(2017)
3. Mukherjee. KL. Medical Laboratory Technology. Volume 1,2 and 3. Tata McGraw Hill education, India. (2010)
4. Talib VH, Khurana. Handbook of Medical Laboratory Technology , CBS publishers, Delhi(2009)
5. Varley H. Practical Clinical Biochemistry, CBS Publishers, Delhi (2008)


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Programme Code:	B.Sc.,			Programme Title:	Bachelor of Zoology	
Course Code:	22UZY6S3			Title	Batch:	2022 – 2025
Lecture Hrs./Week	1	Tutorial Hrs./Sem.	--	Skill Based Elective - II	Semester:	VI
				Bio Farming	Credits:	2

Course Objective

To understand the importance of vermiculture, external and internal structure of earthworm, nutrient value of vermicompost, preparation methods of vermibed and maketing of vermicompost

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	Remember the role of organisms in Modern Farming	K1
CO2	Construct the concepts and principles of biofarming	K2
CO3	Apply the knowledge of organisms in biofarming	K3
CO4	Analyze the potential of biocompost as an alternative to chemical fertilizers	K4
CO5	Evaluate the knowledge about various type of organisms in biofarming	K5

Mapping

PO /PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
CO1	H	M	M	H	M	M	H	H	M
CO2	H	H	M	H	M	L	M	M	M
CO3	H	L	L	H	M	L	M	M	H
CO4	M	M	L	H	H	H	H	M	H
CO5	H	M	M	M	L	M	M	M	M

Units	Content	Hrs
Unit I	Soil as a natural medium ○ Role of microorganisms in soil formation ○ Soil microorganisms ○ Symbiotic microbes and Crop production ○ Types of Soil	3
Unit II	Types of Organisms in biofarming ○ Azotobacter - Field applications and beneficial role of azotobater ○ Azospirillum- Field application ○ Blue green algae-Field application and crop response	3
Unit III	Vermiculture ○ <i>Economic importance of Vermiculture*</i> ○ Collection of earth worms ○ Methods of vermicomposting ○ <i>Vermiwash</i>	3

Unit IV	- Indoor vermicomposting - Precautions need for vermicomposting - Biodegradable wastes used in vermiculture - Nutrient Content of vermicompost	3
Unit V	- Preparation of Vermibed - Maintenance of Vermibed - Collection of vermicompost - Marketing of vermicompost	3
Total Contact Hrs		15

*denoted as self study topics

Pedagogy

Direct Instruction, Digital Presentation

Assessment Methods:

Seminar, Quiz, Assignments, Group Task.

Text Book

- Seethlakshmi. M. and Santhi. R. Vermitechnology, Saras publication, Nagercoil, Tamilnadu. (2012)
- Nair N.C., Leelavathy S., Soundarapandian N and Arumugam, N. A text book of Invertebrates – Saras Publication, Nagercoil, Tamilnadu(2018)
- Mani. A., Selvaraj. A.M., Narayanan, L. M. and Arumugam, N. Microbiology. Saras publications, 114/35 G, A.R.P Camp Road, Periyavillai, Kottar PO, Nagercoil -629 002, Kanyakumari(2007)

Reference Books

- Ekambaranatha Iyyer, A Manual of Zoology, Part I & II, Invertebrata, Revised edition. S. Viswanathan(Printers and Publishers) (1990)
- Odum, E. P Fundamentals of ecology W.B. Sanders Company, London(1971)
- Gupta. P. K. Vermicomposting for sustainable agriculture. Agrobios. Jothpur. India (2005)
- Rana. S. V. S. Environmental biotechnology. Rastogi Publication. Meerut. India (2010)
- Aravind Kumar. Verms and vermitechnology APH Publishing co-operation. (2005)

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Programme Code:	B.Sc.,			Programme Title:	Bachelor of Zoology	
Course Code:	22UZY6AL			Title:	Batch:	2022 – 2025
Lecture Hrs./Week	-	Tutorial Hrs./Sem.	--	Advanced Learner Course- Zoology for Competitive Exams	Semester:	VI
					Credits:	5*

Course Objective

To acquire the comprehensive knowledge of zoology to achieve the competitive examinations .

Course Outcomes

On the successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	Remember the basic concepts of emerging fields of zoology	K1
CO2	Understand the Knowledge about different fields of zoology	K2
CO3	Analyse the principles and concepts of zoology	K3
CO4	Deploy the zoology knowledge to competitive examinations	K4
CO5	Assess the various methods and tools to remember the zoology topics	K5

Mapping

PO /PSO CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2
CO1	M	L	M	L	H	H	M	M	H
CO2	M	M	L	L	M	H	M	M	H
CO3	L	M	M	M	M	H	H	M	H
CO4	M	M	M	M	M	M	M	M	H
CO5	M	M	M	M	M	M	H	M	H

Units	Content	Hrs
Unit I	GENETICS Mendelian principles - Concept of gene : Allele, multiple alleles, pseudoallele, complementation tests -linkage and crossing over, sex linkage, sex limited and sex influenced characters. -Extra chromosomal inheritance - Human genetics : Pedigree analysis, lod score for linkage testing, karyotypes, genetic disorders. Mutation : Types, causes and detection, mutant types – lethal, conditional, biochemical, loss of function, gain of function, germinal versus somatic mutants, insertional mutagenesis.	
Unit II	DEVELOPMENTAL BIOLOGY Basic concepts of development – Gametogenesis -fertilization and early development: zygote formation, cleavage, blastula formation- Morphogenesis and organogenesis in animals	
Unit III	ANIMAL PHYSIOLOGY Blood and circulation - Cardiovascular System: - Respiratory system - Nervous system - Sense organs - Excretory system - Digestive system - Reproductive system - Endocrine glands.	
Unit IV	ECOLOGY The Environment - Population Ecology- Species Interactions- Community Ecology- Ecological Succession-Ecosystem structure- Biogeography- Applied Ecology- Environmental pollution; -Conservation Biology	

Unit V	EVOLUTION AND BEHAVIOUR Emergence of evolutionary thoughts Lamarck; Darwin–concepts of variation, adaptation, struggle, fitness and natural selection; Mendelism; Spontaneity of mutations-Evolutionary synthesis- Origin of cells and unicellular evolution- Experiment of Miller (1953)-Paleontology and Evolutionary History-Molecular Evolution: Concepts of neutral evolution; Molecular tools in phylogeny, classification and identification; Protein and nucleotide sequence analysis; origin of new genes and proteins; Gene duplication and divergence-Mechanisms: Population genetics.	
	Total Contact Hrs	

**denoted as self study topics*

Pedagogy and Assessment Methods: Self Study

Text Book

1. Mani. A., Selvaraj. A.M., Narayanan, L. M. and Arumugam, N. Microbiology. Saras publications, 114/35 G, A.R.P Camp Road, Periaivillai, Kottar PO, Nagercoil -629 002, Kanyakumari(2007)
2. Verma and Agarwal. Principles of Ecology. S. Chand & Company, Ltd. New Delhi, 110055th edition(2003).
3. Saha, T. K. Life: Origin, evolution and adaptation. Books and allied (P) Ltd. Kolkata – 700 010, 1st edition(2002)

Reference Books

1. CSIR-UGC National Eligibility Test (NET) for Junior Research Fellowship and Lecturer-ship (2022)
2. Balinsky - Embryology - Philadelphia, Saunders College Publishing - 5th Edition, (2012).
3. Tomar and Singh, Evolutionary Biology – Rastogi Publication, Meerut. 250 002th edition(2010).
4. Berrill, W. J. and Graw M. C. - Developmental biology - Hill Book Co, New York – (2010).
5. Kottari, L., *et al.*, - Essentials of Human Genetics. University Press Private Ltd. Hyderabad, 500029 - 5th edition – (2009).
6. Verma and Agarwal - Genetics. S. Chand & Company, Ltd. New Delhi, 110055 - 3rd edition –(2008).
7. Miglani G. S. - Advanced Genetics. Narosa Publishing House, New Delhi, 110002 - 1st edition –(2002).
8. Subramaniam - Developmental Biology. Narosa Publishing House, New Delhi – (2002)
9. Russell, J.- Essential Genetics. Black well Scientific Publication London - 2nd edition – (1987).
10. E.D. Garber - Cytogenetics – An Introduction. TATA McGRAW – Hill Publishing Company Ltd. New Delhi - (1979)
11. Wesley - An Outline of animal development – Davenport, Addison –publishers, University of Michigan – (1979).
12. Odum E. P. Fundamentals of ecology . W. B. Saunders Company, London. 1st edition. (1971).


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Programme code:	B. Sc.,	Programme Title :	Bachelor of Zoology	
Course Code:	22UZY 616	Title:	Batch :	2022 – 2025
		Project	Semester:	VI
Hrs/Week:			Credits:	2

Group Project and Viva Voce

Each faculty will be allotted 5 students. A specific problem will be assigned to the students. The topic/area of work will be finalized at the end of IV semester, allowing scope for the students to gather relevant literature during the vacation. The research work will be carried out based on the objective of the project and viva voce/presentation will be conducted by a panel comprising of HOD, internal examiners. A power point presentation by the student group will be evaluated on the basis of students' response to the questions.

Area of Work

Limnology, Pollution studies, Clinical studies, Molecular Biology, Fish Toxicology, Microbiology, Entomology, Environmental Science, Biotechnology, Bioinformatics, Cancer Biology.

Methodology

Each project should contain the following details:

- Brief introduction on the topic
- Review of Literature
- Materials and Methods
- Results and Discussions – evidences in the form of figures, tables and photographs
- Conclusion / Summary
- Bibliography

The above contents should not exceed 50 pages

Internal Assessment

S. No	Internal Components	Marks
1	Selection of the field of study, Topic & Literature Collection	5
2	Research Design and Data Collection	5
3	Analysis & Conclusion	5
4	Rough Draft Submission	10
Total		25

External Assessment

S. No	External Components	Marks
	Mode of Evaluation	
	Project Report	
1	Relevance of the topic to academic / society Objectives	05
2	Experimental Design	05
3	Expression of Results and Discussion	05
	Viva Voce	
4	Presentation	05
5	Discussion	05
Total		25


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