यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ, नाशिक



नाशिक - ४२२ २२२ (महाराष्ट्र) भारत



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विज्ञान विद्याशाखा / School of Sciences

4Y B.Sc. (Honours) (Major in Zoology) (2025 Pattern) Programme

Minutes of the PAC Meeting held on 10.06.2024

Date: 10th June, 2024 Time: 10.30 am to 04.30 pm

The PAC Meeting for 4Y B.Sc. (Honours) (Major in Zoology) (2025 Pattern) Programme as per NEP 2020 of **School of Sciences** was held offline & online on **Monday, 10-06-2024 at 10:30 AM** at school meeting hall. Following members and invitees were present in person,

01	Dr. Chetana Kamlaskar	(Chairperson) and Member
02	Prof. (Dr.) Resham Bhalla	Member
03	Prof. (Dr.) Chetan Jawale	Member
04	Dr. Somnath Waghmare	Member
05	Mr. Ravindra Bharsat	Academic Coordinator (Zoology Programme) and Invitee
06	Dr. Dnyaneshwar Bhusanur	Invitee
07	Dr. Jagruti Chavan	Invitee
08	Ms. Minakshi Kadel	Invitee
09	Dr. Bharat More	Invitee
10	Mr. Nandkishor Sangle	Invitee
11	Ms. Tejaswi Kadam	Invitee

Following members could not attend the meeting due to their other engagements.

01 Dr. Sunanda More Member

Dr. Chetana Kamlaskar, Chairperson and Member of the PAC first welcomed PAC members and introduced the members about the purpose of the meeting. During the meeting following items were discussed.

SN	Details of Items	Resolution
1	Agenda 1: To finalize and approve proposed BSc (Honours) (Major in Zoology) programme - credit distribution details, second and third year (semester 03 to 06).	The PAC members unanimously finalized and approved the proposed programme structure and credit distribution details for all second- and third-year courses at semester 03 to 06 detailed syllabus related to Major, Minor courses of Zoology, and their evaluation pattern for all first, second and third year courses at semester 01 to 06 of the following 02 programmes as per NEP2020 guidelines, with few suggestions about courses in programme structure:
		 i) 4 Year B.Sc. (Honours) (Major in Zoology and Minor in Chemistry) ii) 4 Year B.Sc. (Honours) (Major in Zoology and Minor in Botany)
		For Major in Zoology programmes, the following Suggestions are given by the PAC members: 1. For the First year (Semester 01 and 02) of proposed B.Sc. programme, PAC members suggested the following changes in first-year courses of 4Y B.Sc. (Honours) (Major in Zoology) • In Semester 01, ZOO101: Animal Diversity course - enrich the references. • In Semester 02, ZOO103: Anatomy & Developmental Biology of Vertebrates course - it has been advised to rename course title as 'ZOO103: Comparative Anatomy & Developmental Biology of Vertebrates'. This shall also reflect in respective course lab activity. 2. For the Second year (Semester 03 and 04) of proposed B.Sc. programme, PAC members suggested the following changes • In semester 03, ZOO201: Animal Physiology & Ecology- it has been advised to rearrange sequence of units within credit 01 & 02 to maintain the logical flow of the content covered. This shall also reflect in respective course lab activity with some addition of practicals. • In course ZOO202: Wildlife Conservation it has been advised

- to rearrange two units of credit 01.

 In semester 04, ZOO205:

 Microbiology it has been advised to rename units of 01-02, 01-03 & 02-02 and revise them with slight modifications.

 3. For the Third year (Semester 05 and 06)
 - 3. For the Third year (Semester 05 and 06) of proposed B.Sc. programme, PAC members suggested the following changes
 - In semester 05, ZOO301: Mammalian Histology it has been advised to slightly modify the course content of units 02-04, 03-03, 03-04, 04-03 & 04-04. This shall also reflect in respective course lab activity with some addition of practicals.
 - In semester 06 course ZOO306: Pest Management & Parasitology, advised to merge and update the content of units 02-03 & 02-04. This shall also reflect in respective course lab activity.
 - 4. It is also suggested that course content of major shall be used for providing Zoology as Minor for other programmes.

Action Taken: Programme structure and syllabus has been updated as per the discussion in PAC meeting.

Refer **Appendix I & II** for updated programme structure & syllabus.

Agenda 2: Finalization and approval of Syllabus of Elective courses (DSE), OE/VSC courses etc related to Zoology

- 1. The PAC members unanimously finalized and approved the syllabus of the proposed Major in Zoology courses with few suggestions, which were retained after the finalization of the programme structure.
 - Course content for the following Elective courses: ZOO304: Techniques in Medical Forensic Zoology, ZOO305: Apiculture and Sericulture, ZOO310: Economic Zoology, first draft will be prepared by Dr. Jawale sir, it gets finalization by other PAC members.
- 2. The selection of Elective courses (DSE) related to Zoology have been discussed and approved after fruitful deliberations among all PAC members.
- 3. The OE/VSC courses etc. related to Zoology have been discussed and in which some courses are suggested which will be open for

		all faculties. The detail discussion regarding OE/VSC will be finalised in next PAC meeting. • The PAC members Suggested OE course title are given below: - i. Vermicomposting Management ii. Poultry Management iii. Sericulture Management
	Action Taken: Syllabus has been up Refer Appendix II for updated sylla	iv. Public health and hygiene. dated as per the discussion in PAC meeting.
3	Agenda 3: Framing guidelines for OJT/FP and RP Courses	The PAC members agreed to guide time to time regarding the OJT/FP and RP courses. A booklet of OJT/FP will be proposed by School of Sciences for all UG courses, which will be finalized in due course of time. It was also resolved to authorize the Director of this School to enrich and update the OJT, Field Project (FP), and Research Project (RP) guidelines from time to time as per the University Policy decisions/norms.
4	Agenda 4: Identification of Writers/ Editors for SLM development task	The PAC members unanimously gave their consent for the writing/editing of the Self Learning Material (SLM) for the proposed B.Sc. (Honours) (Major in Zoology) programme. For a few courses, the PAC members have given their consent for SLM development. They also agreed to recommend experts for the new courses, in due course of time. It was also resolved to authorize the Director of this School to enrich and update the list of writers/editors for the Self Learning Material (SLM) development task from time to time as per the University Policy decisions/norms.

Meeting ends with vote of thanks by Dr. Jagruti Chavan.

Thanks...

(Dr. Chetana Kamlaskar)

Chairperson, PAC of B.Sc. (Honours) (Major in Zoology) Programme

APPENDIX I: PROGRAMME STRUCTURE

ZOOLOGY: MAJOR, ELECTIVES, MINOR, OE, VSC, IKS COURSES

Abbreviations: Yr.: Year; Sem.: Semester; Cumulative Credits: Cum. Cr.; T- Theory Course; P- Practical course; TW-Term Work; PW- Project Work

		Major												OJT, FP,		Cum.
Level	Sem	Mandatory	Elective	Minor		OE			VSC, SEC (VSEC))	AEC,	/ EC , 1	IKS	CEP, CC, RP		Cr. / Sem
		ZOO101: Animal Diversity (T)	•			(ZOO) OE-I		2		2			2	,		
	I	ZOO102: Lab Activity on ZOO101 (P)	-	-		(ZOO) OE-II		2		2	IKS101:		y in 2		2	22
4.5	П	ZOO103: Comparative Anatomy & Developmental Biology of Vertebrates (T)		ZOO103: Comparative Anatomy & Developmental	2	(ZOO) OE-III		2	VSC102: Lab Activity ZOO103 (P)	2			2		2	22
		ZOO104: Lab Activity ZOO103 (P)		Biology of Vertebrates(T)		(ZOO) OE-IV		2		2			2			
Cum.	Cr.	12	00	02		08			08			10		04		44
	III	ZOO201: Animal Physiology & Ecology (T) ZOO202: Wildlife Conservation (T) 2		ZOO201: Animal Physiology &		(ZOO)OE-V	2	A	SC201: Lab Activity on Animal			2	Field	Project	2	22
5.0		ZOO203: Lab Activity on ZOO201 (P) 2		Ecology (T)	4	(200)0E-V			hysiology & cology (P)			2			2	22
	IV	ZOO204: Genetics & Evolutionary Biology (T)		ZOO204: Genetics & Evolutionary	4	IPR	2		2			2			2	22
		ZOO205: Microbiology (T) 2 ZOO206: Lab Activity on ZOO204(P) 2		Biology (T)											2	
Cum.	Cr.	28	00	10		12			12		14			12		88

Level	Sem	Mandatory	jor	Electives		Minor		OE	VSC, SEC (VSE	C)	AEC, VEC,	OJT, FI		Cum. Cr./
		ZOO301: Mammalian Histology (T)	4	ZOO304: Techniques in Medical Forensic Zoology (T)		Z00301:		Т	VSC207: Lab		IKS	CC, RI	P	Sem
	V	ZOO302: Marine Ecology (T)	2	OR ZOO305: Apiculture &	4	Mammalian Histology (T)	4		Activity on Mammalian	2		FP/CEP	2	22
		ZOO303: Lab Activity on ZOO301(P)	4	Sericulture (T)		mstology(1)			Histology (P)					
5.5		ZOO306: Pest Management & Parasitology (T)	4	ZOO309: Aquarium &		70000 Post								
	VI	ZOO307: Welfare and behaviour of Domesticated Animals (T)	2	Poultry Management (T) OR ZOO310: Economic	4	ZOO307: Pest Management & Parasitology (T)	4					OJT	4	22
		ZOO308: Lab Activity on ZOO306 (P)	4	Zoology(T)		Tarasitology (1)								
Cum.	Cr.	48		08		18		12	14		14	18		132
												•		

- 1	G	Major				7.51		0.17	VSC, SEC	С	AEC, VE	C.	OJT, FP, O	CEP.	Cum . Cr.
Level	Sem	Mandatory		Electives		Minor		OE	(VSEC)		ÍKS	,	ĆC, ŔI		/ Sem
		ZOO401: Biochemistry (T)	4	ZOO406: Development		RES405:									
	VII	ZOO402: Cell Biology (T)	2	Biology (T) OR	4	Research Methodology	4						FP/CEP	2	22
		ZOO403: Applied Zoology Part -I (T) ZOO404: Lab Activity on Biochemistry, Cell Biology 8 Applied Zoology Part-I (P) ZOO409: Molecular Biology (T)		ZOO407: Entomology (T)	т	(T)							11,021	_	
6.0															
				ZOO415: Animal											
	VIII	ZOO410: Genetics (T)	2	Biotechnology (T) OR	4								Z00413:	4	22
	V 111	ZOO411: Applied Zoology Part-II (T)	4	ZOO416: Toxicology (T)	4								OJT	4	
		ZOO412: Lab Activity on Molecular Biology, Genetics	4												
Cum. C	r.	76		16		22		12	14		14		22		176
															1

Programme Structure: B.Sc. (Honours) (Major in Zoology and Minor in Botany) (2025 Pattern)

Level	Sem	Major Mandatory	Electi	ives	Minor		OE		VSC, SEC (VSE	C) AEC, VI	EC, IKS	OJT, FP, CEP, CC, RP		Cum. Cr./
		ZOO101: Animal Diversity (T)	4	Τ			OE-I	2	VSC101: Basic Instrumentation Skills (TW)	AEC101: l Communic (T)	ation -1	2 CC101:		Sem
	I	ZOO102: Lab Activity ZOO101 (P)	2		-		OE-II	2	SEC101: IT & e-Learning Skills (TW)	2 VEC101: Education IKS101: Bit Ayurveda	ology in	2 Yoga (TW)	2	22
4.5	II	ZOO103: Comparative Anatomy & Developmental Biology of Vertebrates (T)	4		BOT103: Evolution and Diversity of Pteridophytes and	2	OE-III	2	Activity on Evolution and Diversity of Pteridophytes and Gymnosperms (P)	AEC102: 1 Communica (T)		CC102: Drawing & Sketching	2	22
		ZOO104: Lab Activity on ZOO103 (P)	2		Gymnosperms (T)		OE-IV	2	SEC102: Solar Panel System (TW)	2 Environm Science	ental	(TW)		
Cum.	Cr.	12	C	00	02		08	•	08	10)	04		44
Ex	it optio	n: Award of UG Certificate in ZO 0	LOGY as	Major	with 44 credits a	nd a	n additional 4 cre	edits	core NSQF course/ I	nternship OR Co	ntinue w	ith Major and M	Iino	r
		ZOO201: Animal Physiology & Ecology (T)	4		BOT301: Angiosperm				VSC201: Lab Activity on Angiosperm			Field Project	2	
	III	ZOO202: Wildlife Conservation (T)	2		Morphology, Taxonomy and Diversity	4	OE-V	2	Morphology, Taxonomy and	AEC201: Modern Indian Language-1 (T)	2	i ioiu i i oject		22
5.0		ZOO203: Lab Activity on ZOO201 (P)	2		(T)				Diversity (P)	Language 1 (1)		CC201: nference & Event nagement (TW)	2	
		ZOO204: Genetics & Evolutionary Biology (T)	4		BOT304: Plant				SEC201:	AECasa		СЕР	2	
	IV	ZOO206: Microbiology (T)	2		Physiology and Metabolism (T)	4	IPR	2	Financial & Investment Skills (TW)	AEC202: Modern Indian Language – 2 (T)		CC202: Personality &	2	22
		ZOO206: Lab Activity on ZOO204 (P)	2								Car	reer Skills (TW)		<u> </u>
Cum.	Cr.	28		00	10		12		12	14		12		88
Exit	option:	Award of UG Diploma in ZOOLO	GY as Ma	jor and			ith 88 credits and r and Minor	d an a	additional 4 credits o	ore NSQF course	/ Interns	ship OR Continu	ue w	ith

		Major							VSC, SEC		AEC, VEC,	OJT, FP	,	Cum.
Level	Sem	Mandatory		Electives		Minor		OE	(VSEC)		IKS	CEP, CC, RP		Cr. / Sem
		ZOO301: Mammalian Histology (T)		ZOO304: Techniques in Medical Forensic Zoology		BOT 206: Cell			VSC207: Lab					
	V	ZOO302: Marine Ecology (T)	2	(T) OR	4	Biology & Genetics (T)	4		Activity on Cell Biology & Genetics(P)	2		FP/CEP	2	22
		ZOO303: Lab Activity on ZOO301 (P)	4	ZOO305: Apiculture & Sericulture (T)					Genetics(1)					
5.5		ZOO306: Pest Management & Parasitology (T)	4	ZOO309: Aquarium &		BOT 306: Analytical								
	VI	ZOO307: Welfare and behaviour of Domesticated Animals(T)	2	Poultry Management (T) OR	4	Techniques in Plant Science &	4					OJT	4	22
		ZOO308: Lab Activity on ZOO306(P)	4	ZOO310: Economic Zoology (T)		Horticulture (T)								
Cum	. Cr.	48		08		18		12	14		14	18		132

Exit option: Award of UG Degree in **ZOOLOGY** as Major with 132 credits OR Continue with Major and Minor

Leve l	Sem	Major Mandatory		Electives		Minor		OE	VSC, SEC (VSEC)	AEC, VEC, IKS	OJT, FP, CEP, CC, RP	Cum. Cr. / Sem
6.0	VII	ZOO401: Biochemistry (T) ZOO402: Cell Biology (T) ZOO403: Applied Zoology Part -I (T) ZOO404: Lab Activity on Biochemistry, Cell Biology & Applied Zoology Part-I (P)	4 2 4 4	ZOO406: Development Biology (T) OR ZOO407: Entomology (T)	4	RES405: Research Methodology (T)	4					2 22
	VIII	ZOO409: Molecular Biology (T) ZOO410: Genetics (T) ZOO411: Applied Zoology Part-II (T) ZOO412: Lab Activity on Molecular Biology, Genetics & Applied Zoology Part-II (P)	4 2 4 4	ZOO415: Animal Biotechnology (T) OR ZOO416: Toxicology (T)	4						ZOO413: OJT	1 22
Cum.	Cr.	76	•	16	1	22		12	14	14	22	176

Four Year UG Honours Degree in **ZOOLOGY** as Major and **BOTANY** as Minor with 176 credits

Programme Structure: B.Sc. (Honours) (Major in Zoology and Minor in Chemistry) (2025 Pattern)

Level	Sem	Major				Minor		OE		VSC, SEC (VSEC	`	AEC,	VEC 1	. VC	OJT, FP, CEP,		Cum. Cr./
Level	Sem	Mandatory		Elective	es	WIIIOF		OE.			,	,	Í		CEF,		Sem
		ZOO101: Animal Diversity (T)	4					OE-I	2	VSC101: Basic Instrumentation Skills (TW)	2	•	ication F)	1-1 2	CC101:		
	I	ZOO102: Lab Activity on ZOO101 (P)	2	-		1		OE-II	2	SEC101: IT & e-Learning Skills (TW)	2	VEC10 Educat IKS101: Ayurve	ion (T) Biolog	y in	(TW)	2	22
4.5	II	ZOO103: Comparative Anatomy & Developmental Biology of Vertebrates (T)	4	-		CHE103 : Physical & Organic Chemistry-I	2	OE-III	2	VSC102: Lab Activity on Physical & Organic Chemistry-I (P)	2	,	ication Г)		CC102: Drawing & Sketching	2	22
		ZOO104: Lab Activity on ZOO103 (P)	2			(T)		OE-IV	2	SEC102: Solar Panel System (TW)	2	Enviro	cate (T)	al 2	(TW)		
Cum.	Cr.	12		00		02		08		08			10		04		44
I	Exit opti	ion: Award of UG Certificate in <mark>ZOO</mark> I	LOG	<mark>Y</mark> as Majo	or w	ith 44 credits an	d aı	n additional 4 credit	s co	re NSQF course/ Inte	rnsh	ip OR Con	tinue	with M	ajor and Min	or	
		ZOO201: Animal Physiology & Ecology (T) ZOO202: Wildlife Conservation (T)	4		Phy	CHE301: ysical & Organic			1	SC201: Lab Activity on Physical & AE	C201	: Modern		Field	l Project	2	
5.0	III	ZOO203: Lab Activity on ZOO201 (P)	2		,	Chemistry-II (T)	4	OE-IV 2	C	Organic hemistry-II (P)		anguage – (T)		Confere	C201: ence & Event ement (TW)	2	22
		ZOO204: Genetics & Evolutionary Biology (T)	4			CHE304: Analytical						:: Modern			P(TW)	2	
	IV	ZOO205: Microbiology (T) ZOO206: Lab Activity on ZOO204(P)	2		(Chemistry (T)	4	IPR 2		estment Skills (TW)		anguage – (T)	2	Persona	C202: lity & Career ls (TW)	2	22
Cum.	Cr.	28		00		10		12		12		14			12		88
Exit	option:	Award of UG Diploma in ZOOLOGY	as M	Iajor and	CH			with 88 credits and r and Minor	an a	ndditional 4 credits c	ore N	SQF cours	se/ Int	ernshij	OR Continu	ie w	ith

		Ma	jor							~~	AEC,	OJT, F	Ρ,	Cum.
Level	Sem	Mandatory		Electives		Minor		OE	VSC, SEC (VSEC	2)	VEC, IKS	CEP,	•	Cr. / Sem
		ZOO301: Mammalian Histology (T)	4	ZOO304: Techniques in Medical Forensic Zoology (T)		CHE206: Physical &			VSC207: Lab Activity on					
	V	ZOO302: Marine Ecology (T)	2	OR ZOO305: Apiculture &	4	Inorganic Chemistry (T)	4		Physical & Inorganic	2		FP/CEP	2	22
		ZOO303: Lab Activity on ZOO301(P)	4	Sericulture (T)					Chemistry (P)					
5.5		ZOO306: Pest Management & Parasitology (T)	4	ZOO309: Aquarium &		CHE and Course								
	VI	ZOO307: Welfare and behaviour of Domesticated Animals (T)	2	Poultry Management (T) OR ZOO310: Economic Zoology	4	CHE306: Green Chemistry (T)	4					OJT	4	22
		ZOO308: Lab Activity on ZOO306 (P)	4	(T)										
Cum.	Cum. Cr. 48			08		18		12	14		14	18		132
		T '	1 0	HC Darma in ZOOI OOV and	٠.	211 121 OP	α .	1	35 1 3351					

Exit option: Award	of UG Degree in ZOOLO	GY as Maior with 132 credits	OR Continue with Major and Minor

Level	Sem	Major					0.77		VSC, SEC	AEC, VEC, IKS		OJT, FP, CEP, CC, RP	Cum . Cr.	
		Mandatory		Electives		Minor		OE					(VSEC)	/ Sem
6.0	VII	ZOO401: Biochemistry (T)	4	ZOO406: Development Biology (T) OR ZOO407: Entomology (T)	4	RES405: Research Methodology (T)								
		ZOO402: Cell Biology (T)	2				4						2	22
		ZOO403: Applied Zoology Part -I (T)	4											
		ZOO404: Lab Activity on Biochemistry, Cell Biology & Applied Zoology Part-I (P)	4											
	VIII	ZOO409: Molecular Biology (T)	4	ZOO415: Animal Biotechnology (T)	4									
		ZOO410: Genetics (T)	2										Z00413: 4	22
		ZOO411: Applied Zoology Part-II (T)	4	ZOO416: Toxicology (T)									OJT 4	
		ZOO412: Lab Activity on Molecular Biology, Genetics & Applied Zoology Part-II (P)	4											
Cum. Cr. 76			16		22	·	12		14	14		22	176	
Four Year UG Honours Degree in Major in ZOOLOGY and Minor in CHEMISTRY with 176 credits														

APPENDIX II:

SYLLABUS OF VXXX: B.Sc. (MAJOR IN ZOOLOGY) {2025 PATTERN}

Refer the syllabus file attached with this mail separate