#### यशवंतराव चव्हाण महाराष्ट्र मुक्त विद्यापीठ, नाशिक

नॅक मानांकित 'अ' श्रेणी



#### Yashwantrao Chavan Maharashtra Open University, Nashik

#### NAAC Accredited 'A' Grade

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विज्ञान विद्याशाखा / School of Sciences

#### 4Y B.Sc. (Honours) (Major in Environmental Science) {2025 Pattern} Programme

#### Minutes of the PAC Meeting held on 09.09.2024

Meeting No.: 02 Date: 09<sup>th</sup> September, 2024 Time: 03.00 to 5.30pm

The PAC Meeting for 4Y B.Sc. (Honours) (Major in Environmental Science) {2025 Pattern} programme as per NEP 2020 of **School of Sciences** was held online on **Monday, 09-09-2024** at 03:00 PM, School meeting hall. Following members and invitees were present,

01	Dr. Chetana Kamlaskar	(Chairperson) and Member
02	Dr. Sunanda More	Member
03	Dr. Pravin Nalawade	Member
04	Dr. Ashish Mane	Member
05	Dr. Kailas Dandge	Member
06	Dr. Jagruti Chavan	Academic Coordinator (Environment Science) and Invitee
07	Ms. Minakshi Kadel	Invitee
08	Mr. Ravindra Bharsat	Invitee
09	Ms. Tejaswi Kadam	Invitee
10	Dr. Dnyaneshwar Bhusnur	Invitee

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 Item 1: To finalize and The PAC members unanimously finalized and approved the proposed Open Elective (OE) Courses approve the detailed syllabus (semester 01 to 03) related to Open their syllabus offered along with (OE) under Environmental Science discipline for the learners Elective courses Environmental Science programme other than Environmental Science Major, in accordance with NEP2020 guidelines. for other faculty, as per NEP 2020 guidelines. The following suggestions were made by the PAC members during the discussion: 1. The title of one the Open Elective courses has been changed as follows: **Course | Finalized Course Title Proposed Title Smart City** Futuristic approach for smart City 2. Dr. Ashish Mane (PAC member) suggested that current trends and developments in specialized fields be incorporated into the syllabus for all five OE courses. 3. In the OE course 'Environmental Law', all 4 Unit titles for the second credit, should be renamed to reflect the specific content of each unit. 4. One more OE, namely 'Ecotourism', is suggested by PAC members to be added to the list of Open Elective (OE) baskets. 5. The list of OE will be modified in the future as per demand of the learners. Action Taken: The Programme structure and syllabus have been updated following the discussion in the PAC meeting. Refer **Appendix I & II** for updated programme structure and syllabus. Agenda 2: To Finalization the The PAC members unanimously finalized the position of the proposed discipline specific IKS position of discipline specific Indian Knowledge system course in Course at semester 03 entitled as 'Environment: programme structure. Indian Culture & Traditions', of the following (Environment: Indian Culture & proposed Environmental Science programmes as Traditions.) per NEP2020 guidelines: i) 4 Year B.Sc. (Honours) (Major in Environmental Science and Minor in Zoology) 4 Year B.Sc. (Honours) (Major in ii) Environmental Science and Minor in Botany) The Following suggestions were made by the **PAC** members:

		<ol> <li>It is advised to offer discipline specific IKS         <ol> <li>credit course in place of 'Pollution Monitoring Technique' in semester 03.</li> </ol> </li> <li>Additionally, the content of 'Pollution Monitoring Technique' should be covered in the form of Term Work in the Skill Enhancement Course (SEC) offered in Semester II as 'Environmental Pollution</li> </ol>
		Analysis'
		acture and syllabus have been updated based on the fer <b>Appendix II</b> for Programme structure and revised
3	Agenda 3: To finalize the courses and syllabus from last verticals (VSC, SEC, AEC, VEC, IKS, OJT, FP, CEP, CC, RP) that will be offered common for all 4Y UG B.Sc. (Honours) programmes of School of Sciences.	Few courses from the last verticals (SEC, AEC, VSC, IKS, CC, CEP etc.) that will be offered common for all programmes have been discussed and approved along with their syllabus. To finalize these courses at the university level, if required, the PAC members unanimously gave authority to the School Director to update the courses in accordance with the university decision as needed.
	Action Taken: The syllabus has been Refer Appendix II for updated syllab	on updated as per the discussion in the PAC meeting.
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 Environmental Science) 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.

Thank You

(Dr. Chetana Kamlaskar)

Chairperson, PAC B.Sc. (Honours)

(Major in Environmental Science)

## APPENDIX I: PROGRAMME STRUCTURE:

# Environmental Science: Major, Electives, Minor, OE, VSC, Sec, AEC, VEC, OJT, FP, CC, CEP, IKS Courses. $\{ {\tt 2025\,Pattern} \}$

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	es	Minor		OE			VSC, SE	C (V	SEC)		AEC,	, VEC,	IKS		CEP, CC, RP		Cr. / Sem
		EVS101: Ecology and Ecosystem (T)	4					OE-101		2				2				2			
	I	EVS102: Lab activities on EVS101 (P)	2	-		-		OE-102		2				2	IKS101	ı: Gene KS(T)	ral	2		2	22
4.5	II	EVS103: Environmental Chemistry and Physics (T)	4	-		EVS103: Environmental Chemistry and	2	OE-103		2	VSC: Lab Acti Environ Chemistry a (P	vity o ment nd Pl	al	2				2		2	22
		EVS104: Lab activities on EVS103 (P)	2			Physics (T)		OE-104		2	EVS105:Env Pollution Ana			2				2			
Cum.	Cr.	12		00		02		08				8				10			04		44
		EVS 201: Biodiversity Conservation (T)	4			EVS 201:					C201: Lab									2	
	III	EVS 202: Environment: Indian Culture & Traditions (IKS)	2	-	Co	Biodiversity onservation (T)	4	OE-201	2	Bi	odiversity servation (P)	2								_	22
5.0		EVS 203: Lab Activity on EVS201 (P)	2																	2	
g. s		EVS 205: Pollution Control Technologies (T)	4			EVS 204:		OE202:								I	EVS2		Bee Keeping <b>W)</b>	2	
	IV	EVS 206: Natural Resource Management (T)	2	-		ollution Control echnologies (T)	4	Intellectual Property Rights	2			2				2				2	22
		EVS 207: Lab Activity on EVS204(P)	2		10	<u> </u>		(TW)												_	
Cum.	Cr.	28		00		10		12			12			1	4				12		88
Cum.	Cr.		2	00		10					12			1	4				12		

				Major							AEC,	OJT, FP	,	Cum.
Level	Sem	Mandatory		Electives		Minor		OE	VSC, SEC (VSE	C)	VEC, IKS	CEP, CC, RP	,	Cr. / Sem
		EVS 301: Environmental Legislation and Audit(T)	4									<b>EVS307</b> : Field		
		EVS 302: Environment Impact assessment(T)	2	EVS 304: Environmental Geosciences (T)  OR		EVS 301:			VSC301:			Project <b>(TW)</b>		
5.5	V	EVS 303: Lab Activities on EVS301, EVS302 and Elective (P)	4	EVS 305: Alternate Energy Resources (T)  OR  EVS 306: Urban Ecosystem & Sustainable Development (T)	4	Environmental Legislation and Audit <b>(T)</b>	4		Environmental Legislation and Audit (P)	2		OR EVS308: Awarene ss of SDG (TW)	2	22
		EVS 309: Remote Sensing and GIS (T)	4	EVS 312: Atmospheric Sciences (T)										
	VI	EVS 310: Environmental Biotechnology (T)	2	OR EVS 313: Environmental Statistics (T)	4	Remote	4					EVS315 : On-Job	4	22
	-	EVS 311: Lab Activities on EVS307, EVS308 and Elective (P)	4	OR EVS 314: Environmental Toxicology, Human Health & Safety (T)	•	Sensing and GIS <b>(T)</b>						Training (TW)	•	
Cum.	.Cr.	48		08		18		12	14		14	18		132
												•		

		Major				751		0.77	VSC, SEC	AEC, VEC,	OJT, FP, CEP,	Cum . Cr.
Level	Sem	Mandatory		Electives		Minor		OE	(VSEC)	IKS	CC, RP	/ Sem
		<b>EVS 401:</b> Environmental Science and Environmental Biology <b>(T)</b>	4	EVS 406: Environmental Education,		RES405:						
	VII	EVS 402: Natural Resources and Their Conservation (T)	2	Policies & Legislation (T)	4	Research Methodology	4					22
	111	EVS 403: Biodiversity and Conservation (T)	4	EVS 407: Management of	1	(T)						
		EVS 404: Lab Activities on EVS 401, EVS 402 & EVS 403 (P)	4	Water Resources (T)								
6.0		EVS 409: Environmental Chemistry (T)	4								EVS413: On-Job	
		EVS 410: Environmental Geosciences & Computer Applications (T)	2	EVS 415: Environmental Sustainability (T)							Training (TW)	
	VIII	EVS 411: Herbal Wealth (T)	4	OR	4						OR 4	22
		EVS 412: Lab Activities on EVS 409, EVS 410 & EVS 411 (P)	4	EVS 416: Solid & Hazardous Waste Management (T)							Field Project (TW)	
Cum. C	cr.	76	1	16	1	22		12	14	14	22	176
		1										1

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

T 1		Major				3.61		0.0			TIGG OF	O (T)	(CEC)	AFG	T/T/	O IIVO		OJT, FP,		Cum.
Level	Sem	Mandatory		Elective	es	Minor		OE			VSC, SEC	J (V	SEC)	AEC,	VEC	C, IKS		CEP, CC, RP		Cr. / Sem
		EVS101: Ecology and Ecosystem (T)	4					OE-101		2	VSC101: Instrumen Skills (T	tatic		,	nicat ( <b>T)</b>	tion-I	2	<b>CC101:</b> Photography		
	I	EVS102: Lab activities on EVS101 (P)	2	-		-		OE-102		2	SEC101: MS with AI (7			Enviro Educat	ion-l	ental I <b>(T)</b>	2	Techniques and Bird Watching (TW)	2	22
4.5	II	EVS103: Environmental Chemistry and Physics (T)	4	-		BOT103: Evolution and Diversity of Pteridophytes	2	OE-103		2	VSC10 Lab Activi Evolution and of Pteridophy Gymnosperi	ty or Dive rtes a	ersity <b>2</b> and	AEC102 Commun			2	CC102: Yoga	2	22
		EVS104: Lab activities on EVS103 (P)	2			and Gymnosperms <b>(T)</b>		OE-104		2	EVS105:Env ntal Pollu Analysis (	ition	<b>2</b>	VEO Enviro Educati		ental	2	(TW)		
Cum.		12		00		02		08	_		0				10			04		44
Exit op	tion: Av	ward of UG Certificate in Environme  EVS 201: Biodiversity Conservation	ental	Science a		jor with 44 cre BOT301:	edits	and an addition	ial 4		GC201: Lab	)F c	ourse/ Ir	iternship (	OR (	1			d N	linor
		(T) ·	4		An	ngiosperms				A	Activity on							5204:		
	III	EVS 202: Environment: Indian Culture & Traditions (IKS)	2		Tax	forphology, xonomy and Diversity	4	OE-201	2	N	ngiosperms Iorphology, xonomy and	2	Indian La	1: Modern anguage - I T)	2	1		Project <b>W)</b>	2	22
5.0		<b>EVS 203:</b> Lab Activity on EVS201 <b>(P)</b>	2		]	(T)					iversity <b>(P)</b>		•	1)		CC20		Applied Arts (W)	2	
J		EVS 205: Pollution Control Technologies (T)	4			<b>T304:</b> Plant		OE202:			SEC201:		AFC20	2: Modern		EVS2		Bee Keeping <b>W)</b>	2	
		EVS 206: Natural Resource	2			ysiology and tabolism <b>(T)</b>	4	Intellectual Property Rights	2		Financial & estment Skills	2	Indian I	anguage -	2			Astronomy ginners	2	22
	IV	Management (T)		-													or DC		_	
		EVS 207: Lab Activity on EVS204(P)	2					(TW)			(TW)									
	. Cr.	EVS 207: Lab Activity on EVS204(P) 28		00		10	EVS204(P) 2 (1W)													

				Major							AEC,	OJT, FP,		Cum.
Level	Sem	Mandatory		Electives		Minor		OE	VSC, SEC (VSEC	C)	VEC, IKS	CEP, CC, RP		Cr. / Sem
		EVS 301: Environmental Legislation and Audit(T)	4	EVS and Environmental Conscionans (T)								FP307: Field		
		EVS 302: Environment Impact assessment(T)	2	EVS 304: Environmental Geosciences (T)  OR		BOT 206:			<b>VSC207:</b> Lab			Project <b>(TW)</b>		
5.5	V	EVS 303: Lab Activities on EVS301, EVS302 and Elective (P)	4	EVS 305: Alternate Energy Resources (T)  OR  EVS 306: Urban Ecosystem & Sustainable Development (T)	4	Cell Biology & Genetics <b>(T)</b>	4		Activity on Cell Biology & Genetics <b>(P)</b>	2		OR CEP308: Awarene ss of SDG (TW)	2	22
		EVS 309: Remote Sensing and GIS (T)	4	EVS 312: Atmospheric Sciences (T)		BOT 306: Analytical								
	VI	EVS 310: Environmental Biotechnology (T)	2	OR EVS 313: Environmental Statistics (T)	4	Techniques in Plant Science	4					EVS315 : On-Job	4	22
		EVS 311: Lab Activities on EVS307, EVS308 and Elective (P)	4	OR EVS 314: Environmental Toxicology, Human Health & Safety (T))		& Horticulture (T)						Training (TW)		
Cum	. Cr.	48		08		18		12	14		14	18		132
Cum	. Cr.		1 0	08	•		00.0			<b>-</b> •		18		1

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

T1	G	Major				D/I:		OF	VSC, SEC	AEC, VEC,	OJT, FP, CEP,	Cum . Cr.
Level	Sem	Mandatory		Electives		Minor		OE	(VSEC)	IKS	CC, RP	/ Sem
	VII	EVS 401: Environmental Science and Environmental Biology (T)  EVS 402: Natural Resources and Their Conservation (T)  EVS 403: Biodiversity and Conservation (T)  EVS 404: Lab Activities on EVS 401, EVS 402 &	4 2 4	EVS 406: Environmental Education, Policies & Legislation (T) OR EVS 407: Management of Water Resources (T)	4	RES405: Research Methodology (T)	4				2	22
		EVS 403 (P)	4									
6.0		EVS 409: Environmental Chemistry (T)	4								EVS413: On-Job	
		EVS 410: Environmental Geosciences & Computer Applications (T)	2	EVS 415: Environmental Sustainability (T)							Training (TW)	
	VIII	EVS 411: Herbal Wealth (T)	4	OR	4						OR 4	22
		EVS 412: Lab Activities on EVS 409, EVS 410 & EVS 411 (P)	4	EVS 416: Solid & Hazardous Waste Management (T)							Field Project (TW)	
Cum. C	cr.	76		16		22	•	12	14	14	22	176

Four Year UG Honours Degree in Major in **Environmental Science** and Minor in **Botany** with 176 credits

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

Level Sem	Major															OJT, FP,		Cum.	
Level	Sem	Mandatory		Electiv	es	Minor		OE		VSC, SEC	C (V	SEC)	AEC,	VEC	, IKS		CEP, CC, RP		Cr. / Sem
		EVS101: Ecology and Ecosystem (T)	4					OE-I		VSC101: l Instrument Skills (T	tatio	on		nicati <b>T)</b>	ion-I		CC101:		
	I	EVS102: Lab activities on EVS101 (P)	2	-		-		OE-II		SEC101: MS with AI (1			Enviror     Science  IKS101: 0	e-I <b>(</b> '	ntal <b>T)</b>	2	Techniques and Bird Watching (TW)	2	22
4.5	II	EVS103: Environmental Chemistry and Physics (T)	4	-		ZOO103: Comparative Anatomy & Developmental	parative tomy & opmental ology orates(T)			Lab Activit Comparative A & Developm Biology Verte (P)	ty o Anat nent	comy cal	AEC102 Commun			2	CC102: Yoga (TW)	2	22
		EVS104: Lab activities on EVS103 (P)	2			Biology Vertebrates(T)				EVS105:Env 2 ntal Pollu Analysis (*	ıtior	ı	VEC Enviror Science		ntal	2	(= 11)		
Cum.	Cr.	12		00	'	02		08		08	8			10			04		44
Exit opt	tion: Av	vard of UG Certificate in Environmen	ntal	Science	as M	ajor with 44 cre	dits	and an addition	al 4	credits core NSQ	F c	ourse	/ Internship (	OR C	ontinue	wit	th Major an	ıd M	Iinor
		EVS 201: Biodiversity Conservation (T)	4							VSC201: Lab							204:		
	III	EVS 202: Environment: Indian Culture & Traditions (IKS)	2			OO201: Animal Physiology & Ecology (T)	4	OE-201	2	Activity on Animal Physiology & Ecology <b>(P)</b>	2		201: Modern n Language - I (T)	2	Fie	eld F ( <b>T</b> )	Project W)	2	22
5.0		EVS 203: Lab Activity on EVS201 (P)	2			Leology (1)				0			(1)			(TV	•	2	
		EVS 205: Pollution Control Technologies (T)	4			O204: Genetics		OE202:		SEC201:		AEC	<b>202:</b> Modern		EVS20	8: E (T)	Bee Keeping  W)	2	
	IV	EVS 206: Natural Resource Management (T)	2		8	Evolutionary Biology (T)	4	Intellectual Property Rights (TW)	2	Financial & Investment Skills (TW)	2		nn Language - II <b>(T)</b>	2			stronomy	2	22
		EVS 207: Lab Activity on EVS205(P)	2					(1 11)		(1 44)			` `			(T)		_ 	
Cum.	Cr.	28		00		10		12		12			14				12		88
Exit op	ption: A	ward of UG Diploma in Environmen	tal S	Science a	as Ma			Minor with 88 cr jor and Minor	redi	its and an addition	nal	4 cred	lits core NSQI	F cou	ırse/ Int	terr	nship OR Co	onti	nue

_				Major							AEC,	OJT, FP,	,	Cum.
Level	Sem	Mandatory		Electives		Minor		OE	VSC, SEC (VSEC	C)	VEC, IKS	CEP, CC, RP		Cr. / Sem
		EVS 301: Environmental Legislation and Audit(T)	4									FP307: Field		
		EVS 302: Environment Impact assessment(T)	2	EVS 304: Environmental Geosciences (T)  OR		700004			<b>VSC207:</b> Lab			Project <b>(TW)</b>		
5.5	V	EVS 303: Lab Activities on EVS301, EVS302 and Elective (P)	4	EVS 305: Alternate Energy Resources (T)  OR  EVS 306: Urban Ecosystem & Sustainable Development (T)	4	ZOO301:  Mammalian Histology(T)	4		Activity on Mammalian Histology <b>(P)</b>	2		OR CEP308: Awarene ss of SDG (TW)	2	22
		EVS 309: Remote Sensing and GIS (T)	4	EVS 312: Atmospheric Sciences (T)										
	VI	EVS 310: Environmental Biotechn ology (T)	2	OR EVS 313: Environmental Statistics (T)	4	ZOO307: Pest Management	4					EVS315 : On-Job	4	22
		EVS 311: Lab Activities on EVS309, EVS310 and Elective (P)	4	OR EVS 314: Environmental Toxicology, Human Health & Safety (T)		& Parasitology (T)	-					Training (TW)	-	
Cum	. Cr.	48		08		18		12	14		14	18		132
				van in initiation		•.1	OD 6			-				

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

		Major			7.51		O.F.	VSC, SEC	AEC, VE	C,	OJT, FP, O	CEP,	Cum . Cr.
Level	Sem	Mandatory	Electives		Minor		OE	(VSEC)	IKS		ĆC, ŘI		/ Sem
6.0	VII	EVS 401: Environmental Science and Environmental Biology (T)  EVS 402: Natural Resources and Their Conservation (T)  EVS 403: Biodiversity and Conservation (T)  EVS 404: Lab Activities on EVS 401, EVS 402 & EVS 403 (P)  4	EVS 406: Environmental Education, Policies & Legislation (T) OR EVS 407: Management of Water Resources (T)	4	RES405: Research Methodology (T)	4						2	22
	VIII	EVS 409: Environmental Chemistry (T)  EVS 410: Environmental Geosciences & Computer Applications (T)  EVS 411: Herbal Wealth (T)  EVS 412: Lab Activities on EVS 409, EVS 410 & EVS 411 (P)  4	EVS 415: Environmental Sustainability (T) OR EVS 416: Solid & Hazardous Waste Management (T)	4							EVS413: On-Job Training (TW)	4	22
Cum. C	Cr.	76	16		22		12	14	14		22		176

### APPENDIX II:

SYLLABUS OF VXXX: B.Sc. (HONOURS) (MAJOR IN ENVIRONMENTAL SCIENCE) {2025 PATTERN}

Refer the syllabus file attached with this mail separately.