



**VXXX: B.Sc. (Honours) (Major in Environmental Science)
{2025 Pattern}**

Minutes of the PAC Meeting held on 14.06.2024

Date: 14th June, 2024

Time: 09.30 am to 05.30 pm

The PAC Meeting for B.Sc. (Honours) (Major in Environmental Science) {2025 Pattern} programme as per NEP 2020 of **School of Sciences** was held offline & online on **Friday, 14-06-2024 at 09:30 AM** at school meeting hall. Following members and invitees were present,

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

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

01	Dr. Sunanda More	Member
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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.

S N	Details of Items	Resolution									
1	Agenda 1: To finalize and approve proposed BSc(Honours) (Major in Environmental Science) programme - credit distribution details, detailed syllabus (semester 01 to 06) related to Major and Minor, of Environmental Science, and their evaluation pattern for all first, second and third year courses at semester 01 to 06.	The PAC members unanimously finalised and approved the proposed programme credit distribution details, evaluation pattern and other details for all first, second and third year courses at semester 01 to 06 related to Major and Minor, of Environmental Science of the following 02 programmes as per NEP2020 guidelines, with few suggestions about courses in programme structure: 1. 4 Year B.Sc. (Honours) (Major in Environment Science and Minor in Botany) 2. 4 Year B.Sc. (Honours) (Major in Environment Science and Minor in Zoology) For Major in Environmental Science 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 Environmental Science) • To increase the number of practicals for each course for semester 01 and 02 2. For the Second year (Semester 03 and 04) of proposed B.Sc. programme, PAC members suggested the following changes • The titles of two courses were changed as follows: <table border="1" data-bbox="759 1263 1430 1527"> <thead> <tr> <th>Sem</th><th>Proposed Course Title</th><th>Finalized Course Title</th></tr> </thead> <tbody> <tr> <td>03</td><td>Biodiversity & its Conservation</td><td>Biodiversity Conservation</td></tr> <tr> <td>04</td><td>Natural Resources and their Management</td><td>Natural Resources Management</td></tr> </tbody> </table> • In semester 03, in course EVS202: Pollution & its Monitoring Techniques - it has been advised to rename course title as 'EVS201: Pollution Monitoring Techniques. Also it has been advised to rearrange sequence of units to maintain the logical flow of the content covered. 3. For the Third year (Semester 03 and 04) of proposed B.Sc. programme, PAC members suggested the following changes • Two courses were shifted from 4 credit course to 2 credit course and vice versa	Sem	Proposed Course Title	Finalized Course Title	03	Biodiversity & its Conservation	Biodiversity Conservation	04	Natural Resources and their Management	Natural Resources Management
Sem	Proposed Course Title	Finalized Course Title									
03	Biodiversity & its Conservation	Biodiversity Conservation									
04	Natural Resources and their Management	Natural Resources Management									

		<table><tr><th>Proposed Course and its Title</th><th>Changed courses and Finalized Course Title</th></tr><tr><td>EIA and Environmental Audit (4 Cr)</td><td>Environmental Legislation and Audit (Changed from 2 Cr to 4 Cr)</td></tr><tr><td>Environmental Legislation (2 Cr)</td><td>Environment Impact assessment (Changed from 4 Cr to 2 Cr)</td></tr></table> In semester 06, in EVS307: Remote Sensing and GIS, a unit related to “Database Management System” was suggested to add. 4. It is also suggested that course content of major shall be used for providing Environmental Science as minor.	Proposed Course and its Title	Changed courses and Finalized Course Title	EIA and Environmental Audit (4 Cr)	Environmental Legislation and Audit (Changed from 2 Cr to 4 Cr)	Environmental Legislation (2 Cr)	Environment Impact assessment (Changed from 4 Cr to 2 Cr)
Proposed Course and its Title	Changed courses and Finalized Course Title							
EIA and Environmental Audit (4 Cr)	Environmental Legislation and Audit (Changed from 2 Cr to 4 Cr)							
Environmental Legislation (2 Cr)	Environment Impact assessment (Changed from 4 Cr to 2 Cr)							
	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 Environmental Science.	The PAC members unanimously finalized and approved the syllabus of the proposed Elective courses (DSE) in Environment Science with few suggestions, which were retained after the finalization of the programme structure : - In semester 05 EVS305: Alternate Energy Resources- it has been advised to rearrange sequence of units to maintain the logical flow of the content covered. - In semester 06, The title of one course (EVS312) were changed as follows: <table><tr><th>Sem</th><th>Proposed Course Title</th><th>Finalized Course Title</th></tr><tr><td>06</td><td>Environmental Toxicology, Human health and safety</td><td>Environmental Health, Toxicology & Safety</td></tr></table> - In semester 03, One Skill Enhancement Course (SEC) was suggested for , “Simulation software’s based on Pollution Control Technology” for second year (3rd semester) - Regarding IKS based on Environment Science, the PAC members suggested the course title as “Environment: Indian Culture & Traditions.”	Sem	Proposed Course Title	Finalized Course Title	06	Environmental Toxicology, Human health and safety	Environmental Health, Toxicology & Safety
Sem	Proposed Course Title	Finalized Course Title						
06	Environmental Toxicology, Human health and safety	Environmental Health, Toxicology & Safety						

		- The OE/VSC courses etc. related to Environmental Science 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: - - Smart City - Biodiversity of India - Environmental Economics - Environment & Public Health. - Sustainable Development Goal & Society - Environmental Law
	Action Taken: Syllabus has been updated as per the discussion in PAC meeting. Refer Appendix II for updated syllabus.	
3	Agenda 3: Framing guidelines for OJT/FP and RP Courses	The PAC members agreed to give time to time in future 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 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, IKS COURSES
{2025 PATTERN}

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

Level	Sem	Major				Minor		OE		VSC, SEC (VSEC)		AEC, VEC, IKS		OJT, FP, CEP, CC, RP		Cum. Cr. / Sem		
		Mandatory		Electives														
4.5	I	EVS101: Ecology and Ecosystem (T)		4	-		-		(EVS) OE-I	2		2		2	22			
		EVS102: Lab activities on EVS101 (P)		2					(EVS) OE-II	2		2	IKS101: Environment: Indian Culture & Traditions			2		
	II	EVS103: Environmental Chemistry and Physics (T)		4	-		EVS103: Environmental Chemistry and Physics (T)	2	(EVS) OE-III	2	VSC102: Lab Activity on Environmental Chemistry and Physics (P)		2	2	22			
		EVS104: Lab activities on EVS103 (P)		2					(EVS) OE-IV	2		2						
	Cum. Cr.		12				00		02		08		08		10		04	
5.0	III	EVS 201: : Biodiversity Conservation (T)		4			EVS 201: Biodiversity Conservation (T)	4	(EVS)OE-V	2	VSC201: Lab Activity on Biodiversity Conservation (P)	2		2	Field Project		2	22
		EVS 202: Pollution Monitoring Techniques (T)		2														
		EVS 203: Lab Activity on EVS201 (P)		2														2
	IV	EVS 204: Pollution Control Technologies (T)		4			EVS 304: Pollution Control Technologies (T)	4	IPR	2	SEC: Simulation softwares based on EVS304	2		2		2	22	
		EVS 205: Natural Resource Management (T)		2														
		EVS 206: Lab Activity on EVS204(P)		2														2
Cum. Cr.		28				00		10		12		12		14		12		88

Level	Sem	Major				Minor	OE		VSC, SEC (VSEC)		AEC, VEC, IKS		OJT, FP, CEP, CC, RP		Cum. Cr. / Sem	
		Mandatory		Electives												
5.5	V	EVS 301: Environmental Legislation and Audit (T)	4	EVS 304: Environmental Geosciences (T) OR EVS 305: Alternate Energy Resources (T) OR EVS 306: Urban Ecosystem & Sustainable Development (T)	4	EVS 206: Environmental Legislation and Audit (T)	4			VSC207: Environmental Legislation and Audit (P)	2			FP/CEP	2	22
		EVS 302: Environment Impact assessment (T)	2													
		EVS 303: Lab Activities on EVS301, EVS302 and Elective (P)	4													
	VI	EVS 307: Remote Sensing and GIS (T)	4	EVS 310: Atmospheric Sciences (T) OR EVS 311: Environmental Statistics (T) OR EVS 312: Environmental Toxicology, Human Health & Safety (T)	4	EVS 306: Remote Sensing and GIS (T)	4						OJT	4	22	
		EVS 308: Environmental Biotechnology (T)	2													
		EVS 309: Lab Activities on EVS307, EVS308 and Elective (P)	4													
Cum. Cr.		48		08		18		12		14		14		18		132
Level	Sem	Major				Minor		OE		VSC, SEC (VSEC)		AEC, VEC, IKS		OJT, FP, CEP, CC, RP		Cum. Cr. / Sem
		Mandatory		Electives												
6.0	VII	EVS 401: Environmental Science and Environmental Biology (T)		4	EVS 406: Environmental Education, Policies & Legislation (T) OR EVS 407: Management of Water Resources (T)	4	RES405: Research Methodology (T)	4						FP/CEP	2	22
		EVS 402: Natural Resources and Their Conservation (T)		2												
		EVS 403: Biodiversity and Conservation (T)		4												
		EVS 404: Lab Activities on EVS 401, EVS 402 & EVS 403 (P)		4												
	VIII	EVS 409: Environmental Chemistry (T)		4	EVS 415: Environmental Sustainability (T) OR EVS 416: Solid & Hazardous Waste Management (T)	4							EVS413: On-Job Training (TW)	4	22	
		EVS 410: Environmental Geosciences & Computer Applications (T)		2												
		EVS 411: Herbal Wealth (T)		4												
		EVS 412: Lab Activities on EVS 409, EVS 410 & EVS 411 (P)		4												
Cum. Cr.		76		16		22		12		14		14		22		176

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

Level	Sem	Major				Minor	OE		VSC, SEC (VSEC)		AEC, VEC, IKS		OJT, FP, CEP, CC, RP		Cum. Cr. / Sem		
		Mandatory		Electives													
4-5	I	EVS101: Ecology and Ecosystem (T)	4	-		-		OE-I	2		2			2	22		
		EVS102: Lab activities on EVS101 (P)	2					OE-II	2		2					IKS101: Environment: Indian Culture & Traditions	2
	II	EVS103: Environmental Chemistry and Physics (T)	4	-		BOT103: Evolution and Diversity of Pteridophytes and Gymnosperms (T)	2	OE-III	2	VSC102: Lab Activity on Evolution and Diversity of Pteridophytes and Gymnosperms (P)	2		2	22			
		EVS104: Lab activities on EVS103 (P)	2					OE-IV	2		2					2	
	Cum. Cr.		12		00		02		08		08		10		04		44
	Exit option: Award of UG Certificate in Environmental Science as Major with 44 credits and an additional 4 credits core NSQF course/ Internship OR Continue with Major and Minor																
5.0	III	EVS 201: : Biodiversity Conservation (T)	4			BOT301: Angiosperms Morphology, Taxonomy and Diversity (T)	4	OE-V	2	VSC201: Lab Activity on Angiosperms Morphology, Taxonomy and Diversity (P)	2		2	Field Project		2	22
		EVS 202: Pollution Monitoring Techniques (T)	2												2		
		EVS 203: Lab Activity on EVS201 (P)	2														2
	IV	EVS 204: Genetics & Evolutionary Biology (T)	4			BOT304: Plant Physiology and Metabolism (T)	4	IPR	2	SEC: Simulation softwares based on EVS304	2		2		2	22	
		EVS 205: Microbiology (T)	2												2		
		EVS 206: Lab Activity on EVS204(P)	2												2		2
Cum. Cr.		28		00		10		12		12		14		12		88	
Exit option: Award of UG Diploma in Environmental Science as Major and Botany as Minor with 88 credits and an additional 4 credits core NSQF course/ Internship OR Continue with Major and Minor																	

Level	Sem	Major				Minor	OE		VSC, SEC (VSEC)	AEC, VEC, IKS		OJT, FP, CEP, CC, RP		Cum. Cr. / Sem		
		Mandatory		Electives												
5.5	V	EVS 301: Environmental Legislation and Audit(T)	4	EVS 304: Environmental Geosciences (T) OR EVS 305: Alternate Energy Resources (T) OR EVS 306: Urban Ecosystem & Sustainable Development (T)	4	BOT 206: Cell Biology & Genetics (T)	4			VSC207: Lab Activity on Cell Biology & Genetics (P)	2			FP/CEP	2	22
		EVS 302: Environment Impact assessment(T)	2													
		EVS 303: Lab Activities on EVS301, EVS302 and Elective (P)	4													
	VI	EVS 307: Remote Sensing and GIS (T)	4	EVS 310: Atmospheric Sciences (T) OR EVS 311: Environmental Statistics (T) OR EVS 312: Environmental Toxicology, Human Health & Safety (T)	4	BOT 306: Analytical Techniques in Plant Science & Horticulture (T)	4						OJT	4	22	
		EVS 308: Environmental Biotechn ology (T)	2													
		EVS 309: Lab Activities on EVS307, EVS308 and Elective (P)	4													
Cum. Cr.		48		08		18		12		14		14		18		132

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

Level	Sem	Major				Minor		OE		VSC, SEC (VSEC)		AEC, VEC, IKS		OJT, FP, CEP, CC, RP		Cum . Cr. / Sem	
		Mandatory		Electives													
6.0	VII	EVS 401: Environmental Science and Environmental Biology (T)		4	EVS 406: Environmental Education, Policies & Legislation (T) OR EVS 407: Management of Water Resources (T)		4	RES405: Research Methodology (T)		4			FP/CEP		2	22	
		EVS 402: Natural Resources and Their Conservation (T)		2													
		EVS 403: Biodiversity and Conservation (T)		4													
		EVS 404: Lab Activities on EVS 401, EVS 402 & EVS 403 (P)		4													
	VIII	EVS 409: Environmental Chemistry (T)		4	EVS 415: Environmental Sustainability (T) OR EVS 416: Solid & Hazardous Waste Management (T)		4						EVS413: On-Job Training (TW)		4	22	
		EVS 410: Environmental Geosciences & Computer Applications (T)		2													
		EVS 411: Herbal Wealth (T)		4													
		EVS 412: Lab Activities on EVS 409, EVS 410 & EVS 411 (P)		4													
Cum. 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				Minor		OE		VSC, SEC (VSEC)		AEC, VEC, IKS		OJT, FP, CEP, CC, RP		Cum. Cr. / Sem	
		Mandatory		Electives													
4.5	I	EVS101: Ecology and Ecosystem (T)	4	-		-		OE-I	2		2		2		2	22	
		EVS102: Lab activities on EVS101 (P)	2					OE-II	2		2	IKS101: Environment: Indian Culture & Traditions	2				
	II	EVS103: Environmental Chemistry and Physics (T)	4	-		ZOO103: Comparative Anatomy & Developmental Biology Vertebrates(T)	2	OE-III	2	VSC102: Lab Activity on Comparative Anatomy & Developmental Biology Vertebrates (P)	2		2		2	22	
		EVS104: Lab activities on EVS103 (P)	2					OE-IV	2		2		2				
Cum. Cr.		12		00		02		08		08		10		04		44	
Exit option: Award of UG Certificate in Environmental Science as Major with 44 credits and an additional 4 credits core NSQF course/ Internship OR Continue with Major and Minor																	
5.0	III	EVS 201: : Biodiversity Conservation (T)	4			ZOO201: Animal Physiology & Ecology (T)	4	OE-V	2	VSC201: Lab Activity on Animal Physiology & Ecology (P)	2		2	Field Project		2	22
		EVS 202: Pollution Monitoring Techniques (T)	2														
		EVS 203: Lab Activity on EVS201 (P)	2												2		
	IV	EVS 204: Genetics & Evolutionary Biology (T)	4			ZOO204: Genetics & Evolutionary Biology (T)	4	IPR	2	SEC: Simulation software based on EVS304	2		2			2	22
		EVS 205: Microbiology (T)	2														
		EVS 206: Lab Activity on EVS204(P)	2												2		
	Cum. Cr.		28		00		10		12		12		14		12		88
Exit option: Award of UG Diploma in Environmental Science as Major and Zoology as Minor with 88 credits and an additional 4 credits core NSQF course/ Internship OR Continue with Major and Minor																	

Level	Sem	Major				Minor	OE		VSC, SEC (VSEC)	AEC, VEC, IKS		OJT, FP, CEP, CC, RP		Cum. Cr. / Sem													
		Mandatory		Electives																							
5.5	V	EVS 301: Environmental Legislation and Audit(T)	4	EVS 304: Environmental Geosciences (T) OR EVS 305: Alternate Energy Resources (T) OR EVS 306: Urban Ecosystem & Sustainable Development (T)	4	ZOO301: Mammalian Histology(T)	4			VSC207: Lab Activity on Mammalian Histology (P)	2			FP/CEP	2	22											
		EVS 302: Environment Impact assessment(T)	2														EVS 310: Atmospheric Sciences (T) OR EVS 311: Environmental Statistics (T) OR EVS 312: Environmental Toxicology, Human Health & Safety (T)	4	ZOO307: Pest Management & Parasitology (T)	4					OJT	4	22
		EVS 303: Lab Activities on EVS301, EVS302 and Elective (P)	4																								
	VI	EVS 307: Remote Sensing and GIS (T)	4	EVS 310: Atmospheric Sciences (T) OR EVS 311: Environmental Statistics (T) OR EVS 312: Environmental Toxicology, Human Health & Safety (T)	4	ZOO307: Pest Management & Parasitology (T)	4								OJT	4	22										
		EVS 308: Environmental Biotechn ology (T)	2																								
		EVS 309: Lab Activities on EVS307, EVS308 and Elective (P)	4																								
Cum. Cr.		48		08		18		12		14		14		18		132											
Exit option: Award of UG Degree in Environmental Science as Major with 132 credits OR Continue with Major and Minor																											

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

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

Refer the syllabus file attached with this mail separately.