

ENVIRONMENTAL EDUCATION

SYLLABUS FOR FOUR YEAR UNDERGRADUATE PROGRAMME

FIRST AND SECOND SEMESTER

(APPROVED BY ACADEMIC COUNCIL VIDE RESOLUTION NO. 3, DATED: 04 – 07 – 23)



ARYA VIDYAPEETH COLLEGE (AUTONOMOUS)

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Structure of Four Year Undergraduate Course

Semester	Type	Core	Minor	SEC	IDC	AEC	VAC/FC	IN
	Credit	4	4	3	3	2	4(2 + 2)	2
I		CE-1114	MN-1114	SE-1113	ID-1113	AE-1112	VL-1112 (Two Courses)	-
II		CE-2114	MN-2114	SE-2113	ID-2113	AE-2112	VL-2112 (Two Courses)	-
III		CE-3214	MN-3214	SE-3213	ID-3213	AE-3212	-	-
		CE-3224						
IV		CE-4214	MN-4214	-	-	AE-4212	-	IN-4212
		CE-4224						
		CE-4234						
V		CE-5314	MN-5214	-	-	-	-	-
		CE-5324						
		CE-5334						
		CE-5344						
VI		CE-6314	MN-6214	-	-	-	-	-
		CE-6324						
		CE-6334						
		CE-6344						
VII		CE-7414	MN-7314	-	-	-	-	-
		CE-7424						
		CE-7434						
		CE-7444						
VIII		CE-8414	MN-8314	-	-	-	-	-
		CE-8424**						
		CE-8434**						
		CE-8444**						

**Students who secure more than 7.5 CGPA at the end of third year (6th semester) may opt for a research dissertation of 12 credits instead of the three core papers.

Course code: First two letters is the abbreviation of course component

First digit implies semester number

Second digit implies course level

Third digit implies course number

Fourth digit implies credit points per course.

Digit	Course Level
1	100 - 199
2	200 - 299
3	300 - 399
4	400 - 499

Semester Wise Credit Distribution

Semester	CREDIT DISTRIBUTION							
	CORE	MINOR	SEC	AEC	IDC	VAC/FC	IN	TOTAL
FIRST	1 x 4	1 x 4	1 x 3	1 x 2	1 x 3	2 x 2	--	20
SECOND	1 x 4	1 x 4	1 x 3	1 x 2	1 x 3	2 x 2	--	20
THIRD	2 x 4	1 x 4	1 x 3	1 x 2	1 x 3	--	--	20
FOURTH	3 x 4	1 x 4	--	1 x 2	--	--	1 x 2	20
FIFTH	4 x 4	1 x 4	--	--	--	--	--	20
SIXTH	4 x 4	1 x 4	--	--	--	--	--	20
SEVENTH	4 x 4	1 x 4	--	--	--	--	--	20
EIGHT	4 x 4	1 x 4	--	--	--	--	--	20

SEC: SKILL ENHANCEMENT COURSE

AEC: ABILITY ENHANCEMENT COURSE

IDC: INTERDISCIPLINARY COURSE

VAC/FC: VALUE ADDED COURSE

IN: INTERNSHIP

Abbreviation of Course Components:

CE (Core), MN (Minor), SE(Skill Enhancement Course), AE (Ability Enhancement Course), VL (Value added Course), ID (Interdisciplinary Course), IN (Internship)

Value Added Course
Environmental Education

Course Objective:

- To provide students with a broad interdisciplinary liberal arts framework for understanding the relationship between humans and their environment.
- To equip students with the knowledge and skills necessary to pursue professional careers and advanced study related to the multi-faceted nature of environmental studies.
- To serve as an environmental resource, through outreach service and community service.

Course Outcome:

After completing the course in Environmental Education, students will be able to:

- Articulate the interconnected and interdisciplinary nature of environmental education.
- Demonstrate an integrative approach to environmental issues with a focus on sustainability.
- Use critical thinking, problem-solving, and the methodological approaches of the social sciences, natural sciences, and humanities in environmental problem solving.

FIRST SEMESTER

PAPER NAME: Environmental Education - I

PAPER CODE: EN – VL – 1112

Total Credits: 2 (Theory)

Total Lectures: 30

Unit 1: Introduction to Environmental Studies : (Lectures: 2)

- Multidisciplinary nature of Environmental Studies
- Scope and importance
- Man and Environment – Deforestation, Population Explosion

Unit 2: Ecosystems : (Lectures: 5)

What is an ecosystem? Structure and function of ecosystem: Energy flow in an ecosystem: food chains, food web, ecological pyramid and ecological succession.

Case studies of the following ecosystems:

- a) Forest ecosystem
- b) Grassland ecosystem
- c) Aquatic ecosystems (ponds, streams, lakes, rivers)
- d) Mountain ecosystem

Unit 3: Natural Resources: (Lectures: 7)

Land resources: Land use change; land degradation, soil erosion and desertification, Agriculture and Environment

Forest resources: Deforestation: Causes and impacts due to mining, Construction of big dams and their effects on forests and people.

Water resources: Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state: Indo-China, Indo-Bangladesh, Cauvery disputes)

Energy resources: Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies - coal mining, crude oil extraction.

Unit 4: Biodiversity and Conservation: (Lectures: 8)

Levels of biological diversity: genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots

- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasion; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and diversity services: Ecological, economic, social, ethical, aesthetic and informational value.

UNIT 5: Environmental Pollution : (Lectures: 8)

Environmental pollution: types, causes, effects and controls; air, water, soil and noise pollution

- Nuclear hazards and human health risks
- Solid waste management: Control measures of urban and industrial waste, Effective waste management, waste minimization, Pyramid of Waste Management
- Pollution case studies - Bharalu river, Deepor Beel, Kolong river

SECOND SEMESTER

PAPER NAME: Environmental Education - II

PAPER CODE: EN – VL – 1112

Total Credits: 2 (Theory: 1 + Project/Practical/Tutorial: 1)

THEORY: 1 Credit

TOTAL LECTURES: 15

Unit 1: Environmental Policies & Practices: (Lectures: 8)

Sustainable development: Problems related to energy, Water Conservation, Rainwater harvesting.

Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture

Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of pollution) Act; Wildlife Protection Act; Forest Conservation Act, Forest Acts.

Human animal conflicts in the context of Assam, Population Displacement.

Unit 2: Human Communities and the Environment: (Lectures: 7)

Disaster management: floods, earthquake, cyclones and landslides

Environmental movements: Chipko, Narmada Bachao, Jadav Payeng and Man - made Forest.

Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.

Environmental communication and public awareness, case studies (CNG, electric vehicles, green energy, waste minimization)

Project Work/Field Visit:(Within 1000 words)

CREDIT: 1

(LECTURES/HOURS: 30)

1. Visit to an area to document environmental assets: river/forest/flora/fauna, etc.
2. Visit to a local polluted site - Urban/Rural/Industrial/Agricultural.
3. Study of common plants, insects, birds and basic principles of identification.
4. Study of simple ecosystems - pond, river, stream.
5. Audio – Visual Class on Environment Moments.

RECOMMENDED BOOKS:

1. A. Kaushik & C. P. Kaushik: Perspectives in Environmental Studies; New Age International Publishers.
2. A.Gopinath;Jitha. G: An Introduction to Environmental Studies; Vishal Publishing Company, Jalandhar, Delhi.
3. K. G. Bhattacharya: Environmental Studies; Assam Book Depot.
4. Azad Ali: Environmental Studies; Kalyani Publishers.
5. J.P. Sharma: Comprehensive Environmental Studies; Laxmi Publication Pvt. Ltd. New Delhi.
6. GautamPurkayastha: Environmental Studies (4th. Revised & Enlarged Edition; Kalyani Publishers; New Delhi, India.
7. Manideep Raj: Environmental Studies; Ashok Book Stall.
8. S.C Santra: Environmental Science; New Central Book Agency.
9. P.D. Sharma: Ecology & Environment (13th. Edition); Rastogi Publication; Meerut, India.
10. Jonathan Turk: Introduction to Environmental Studies; Saunders College Publishing, Dryden Press, New York, U.S.A.
11. Down to Earth (News Magazine).
12. Carson. R: Silent Spring; Houghton Mifflin Harcourt.