COURSE OUTCOME

Environmental Science	B23-VAC-201	Course Year	2018-2019

Purpose	To familiarize the students with the basics of Biotechnology
	Course Outcomes
B23-VAC-201.1	Understand the concept of environmental studies, sustainable development and ecosystem.
B23-VAC-201.2	Learn about the various natural resources and about biodiversity and its conservation.
B23-VAC-201.3	Know about the types of pollution, solid waste management
B23-VAC-201.4	Global environmental issues and environmental laws .
B23-VAC-201.5	Understand the concept of population growth and its impacts on environment. Disaster management
B23-VAC-201.6	Get knowledge about the environment, its problems, impacts and solutions.

UNIVERSITY SCHEME

VAC2B23-VAC-201

Session:2023-24			
Part A-Introduction			
Subject	Environmental Science		
Semester	I/ II		
Name of the Course	**Environmental Studies**		
Course Code	**B23-VAC-201**		
Course Type: (CC/MCC/MDC/CC-M/DSEC /VOC/DSE/PC/AEC/VAC)	**VAC**		
Level of the course(As per Annexure-I	100-199		
Pre-requisite forth e course(if any)	NA		
Course Learning Outcomes(CLO):	After completing this course, the learner will be able to: 1. Understand the concept to environmental studies, sustainable development and ecosystem. 2. Learn about the various natural resources and about biodiversity and its conservation. 3. Know about the types of pollution, solid waste management, global environmental issues and environmental laws. 4. Understand the concept of population growth and its impacts on environment and disaster management. 5. Get knowledge about the environment, its problems, impacts and solutions.		
Credits	Theory	Practical	Total
	2	NA	2
Contact Hours	2	NA	2
Max.Marks:50 **InternalAssessmentMarks:**15 **EndTermExamMarks:**35		**Time:** 2 hours	

UNIVERSITY SYLLABUS

Instructions for Paper-Setter

Total number of questions set will be nine. Questions no. 1 is compulsory covering the entire syllabus. Two questions will be set from each unit. Students have to attempt five questions in all, selecting one question from each unit including the compulsory question. Each question is of 7marks. All questions carry equal marks. Final theory exam time allowed will be of 3 hours.

Unit	Topics	Contact Hours
I	**Introduction to environmental studies:** Multidisciplinary nature of environmental studies; Scope and importance; Concept of sustainability and sustainable development. **Ecosystems:** Definition, structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs, Major ecosystems types: Forest ecosystem, Grass land ecosystem, Desert ecosystem and Aquatic eco system(lakes, rivers, oceans).	02hours/week
II	**Natural resources:Renewable and Non-renewable Resources** Land resources: Land degradation and soil erosion. Forest resources: Importance of forests, deforestation : causes and impacts on environment. Water resources: Use and over-exploitation of surface and ground water. Energy resources: Renewable and non-renewable energy sources. **Biodiversity and Conservation:** Definition and its types, Endangered and endemic species of India. Threats to biodiversity: Habitat loss, poaching of wildlife, man- wild conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity. Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and informational values.	
III	**Environmental pollution** Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution. Solid waste management: Sources, methods of disposal: Land fill, incineration and composting. Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture. **Environmental Policies & Practices**	

	Environmental laws: Environment(Protection) Act,1986,Air(Prevention & Control of Pollution) Act, 1981, Water (Prevention and control of Pollution)Act,1974.
IV	**Human Communities and the Environment:** Human population growth: Impacts on environment, human health and welfare. Resettlement and rehabilitation of project affected person. Disaster management: floods, earthquake, cyclones, l and slides and drought. Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.

LIST OF THE TEXT BOOKS AND REFERENCED BOOKS

1. Kaushik, A & Kaushik, C.P.2022. Perspectives in Environmental Studies.New Age International Pvt Ltd, New Delhi.
2. Bharucha,E.2021.AText book of Environmental Studies for Undergraduate Courses, Orient Black swan Pvt Ltd.
3. Goswami,P.,Mandal,J.&Singh, S.2022.A Text book on Environmental Studies, Ashok book stall, Assam.
4. Joshi,P.C.&Joshi,N.2009.A Text Book of Environmental Science. APH Publishing Corporation.
5. Basu,
6. M. & Xavier Savarimuthu,S.J. 2017. Fundamentals of Environmental Studies. Cambridge University Press.
7. Singh,R.P.&Islam,Z.2012.Environmental Studies. Concept Publishing Company

LESSON PLAN

Name of the Faculty:	**Ms Shweta**
Discipline:	**BCA**
Semester:	**1stSem**
Subject:	**EVS**
Work Load (Lecture/Practical) per week (In hours):	**Lecture-3**

S. No	**Lecture No.**	**Theory**		
		Topic (Including Assignment/Test/Quiz)	**Pedagogy (PPT/Chalk and Board/Video Recording /Activity/Case Study)**	**CO**
1.	L1.	Multidisciplinary nature of Environmental Studies.	PPT, Chalk and Board	
2.	L2.	Concept of Sustainability and Sustainable development	PPT, Chalk and Board	
3.	L3.	Ecosystems : Definition, structure and Function of ecosystem; Energy Flow	PPT, Chalk and Board	
4.	L4.	Food Chain, food webs, Forest Ecosystem	PPT, Chalk and Board	
5.	L5.	Grassland Ecosystem	PPT, Chalk and Board	
6.	L6.	Desert Ecosystem and Aquatic Ecosystem	PPT, Chalk and Board	
7.		Assignment 1	Offline	

8.	L7.	Natural Resources : Renewable and Non-renewable Resources.	Chalk and Board, PPT	
9.	L8.	Land Resources : Land Degradation & Soil erosion	Chalk and Board	
10.	L9	Forest Resources : Importance of forests, deforestation : causes and impacts on environment.	Chalk and Board, PPT	
11.	L10	Water Resources : Use and over-exploitation of surface and ground water.	Chalk and Board	
12.	L11	**Energy Resources : Renewable and non- renewable energy sources.**		
13.	L12	**Biodiversity and Conservation: Definition and its types.**		
14.	L13	Endangered and endemic species of India	Chalk and Board	
15.	L14	Threats to biodiversity : Habitat loss, poaching of wildlife, mam-wild conflicts	PPT ,Chalk and Board	
16.	L15	Conservation of biodiversity : in-situ and Ex-situ conservation of biodiversity	Chalk and Board	
17.	L16	Ecosystem and biodiversity services	Chalk and Board	
18.		Assignment 2	Offline	
19.	L17	Test	Offline	
20.	L18	Environmental pollution : types, causes, effect and controls	Chalk and Board	

21.	L19	**Air and Water Pollution**	Offline	
22.	L20	**Soil and Noise Pollution**	Offline	
23.	L21	Solid waste Management	Chalk and Board	
24.	L22	Climate Change , Global warming, Ozone layer Depletion	Chalk and Board	
25.	L23	Acid Rain, impact on human communities and agriculture	Chalk and Board	
26.	L24	Environmental Policies & Practices	Chalk and Board	
27.	L25	Human Communities and the Environment	Chalk and Board	
28.	L26	Human population growth: impact on environment, Human health and welfare	Chalk and Board and PPT	
29.	L27	Resettlement and rehabilitation of project affected person	Chalk and Board	
30.		Assignment 3	Offline	
31.	L28	Disaster Management : Floods,	Chalk and Board	
32.	L29	earthquake , cyclone	Chalk and Board	
33.	L30	Landslides**,** Drought	Chalk and Board	
34.	L31	**Class Test**	Offline	
35.	L32	Environmental Ethics	Chalk and Board	
36.	L33	Role of Indian and other religions and cultures in environmental conservation	Chalk and Board	

37.	L34	Class Test	offline	
38.	L35	Revision and doubts Session	Chalk and Board	