

## VAC 2 B23-VAC-201

Session: 2023-24			
Part A - Introduction			
Subject	Environmental Science		
Semester	I/ II		
Name of the Course	<b>Environmental Studies</b>		
Course Code	<b>B23-VAC-201</b>		
Course Type: (CC/MCC/MDC/CC-M/DSEC /VOC/DSE/PC/AEC/VAC)	<b>VAC</b>		
Level of the course (As per Annexure-I)	100-199		
Pre-requisite for the course (if any)	NA		
Course Learning Outcomes (CLO):	After completing this course, the learner will be able to: <ol style="list-style-type: none"> <li>1. Understand the concept of environmental studies, sustainable development and ecosystem.</li> <li>2. Learn about the various natural resources and about biodiversity and its conservation.</li> <li>3. Know about the types of pollution, solid waste management, global environmental issues and environmental laws.</li> <li>4. Understand the concept of population growth and its impacts on environment and disaster management.</li> <li>5. Get knowledge about the environment, its problems, impacts and solutions.</li> </ol>		
Credits	Theory	Practical	Total
	2	NA	2
Contact Hours	2	NA	2
<b>Max. Marks: 50</b> <b>Internal Assessment Marks: 15</b> <b>End Term Exam Marks: 35</b>		<b>Time: 2 hours</b>	
Part B- Contents of the Course			

### 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 7 marks. All questions carry equal marks. Final theory exam time allowed will be of 3 hours.

<b>Unit</b>	<b>Topics</b>	<b>Contact Hours</b>
I	<b>Introduction to environmental studies:</b> Multidisciplinary nature of environmental studies; Scope and importance; Concept of sustainability and sustainable development. <b>Ecosystems:</b> Definition, structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs, Major ecosystems types: Forest ecosystem, Grassland ecosystem, Desert ecosystem and Aquatic ecosystem (lakes, rivers, oceans).	02 hours/week
II	<b>Natural resources: Renewable and Non- renewable Resources</b> 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. <b>Biodiversity and Conservation:</b> Definition and its types, Endangered and endemic species of India. Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife 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	<b>Environmental pollution</b> Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution. Solid waste management: Sources, methods of disposal: Landfill, incineration and composting. Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture. <b>Environmental Policies &amp; Practices</b>	

	Environmental laws: Environment (Protection) Act, 1986, Air (Prevention & Control of Pollution) Act, 1981, Water (Prevention and control of Pollution) Act, 1974.	
IV	<p><b>Human Communities and the Environment:</b>  Human population growth: Impacts on environment, human health and welfare.  Resettlement and rehabilitation of project affected person.  Disaster management: floods, earthquake, cyclones, landslides and drought.  Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.</p>	
<b>Suggested Evaluation Methods</b>		
<p><b>Internal Assessment:15 marks</b>  ➤ <b>Theory</b></p> <ul style="list-style-type: none"> <li>• Class Participation: 4 marks</li> <li>• Seminar/presentation/assignment/quiz/class test etc.: 4marks</li> <li>• Mid-Term Exam: 7 marks</li> </ul>		<p><b>End Term Examination:</b>  Theory: 35 marks  (Written exam)</p>
<b>Part C-Learning Resources</b>		
<p><b>Recommended Books/e-resources/LMS:</b></p> <ol style="list-style-type: none"> <li>1. Kaushik, A &amp; Kaushik, C.P. 2022. Perspectives in Environmental Studies. New Age International Pvt Ltd, New Delhi.</li> <li>2. Bharucha, E. 2021. A Textbook of Environmental Studies for Undergraduate Courses, Orient Blackswan Pvt Ltd.</li> <li>3. Goswami, P., Mandal, J. &amp; Singh, S. 2022. A Textbook on Environmental Studies, Ashok book stall, Assam.</li> <li>4. Joshi, P.C. &amp; Joshi, N. 2009. A Text Book of Environmental Science. APH Publishing Corporation.</li> <li>5. Basu, M. &amp; Xavier Savarimuthu, S.J. 2017. Fundamentals of Environmental Studies. Cambridge University Press.</li> <li>6. Singh, R.P. &amp; Islam, Z. 2012. Environmental Studies. Concept Publishing Company.</li> </ol>		

## ANNEXURE-I

### Levels of Courses

**Levels of Courses:** Courses shall be coded based on the learning outcomes, level of difficulty, and academic rigor. The coding structure is as follows:

**0-99:** Pre-requisite courses required to undertake an introductory course which will be a pass or fail course with no credits. It will replace the existing informal way of offering bridge courses that are conducted in some of the colleges/ universities.

**100-199:** Foundation or introductory courses that are intended for students to gain an understanding and basic knowledge about the subjects and help decide the subject or discipline of interest. These courses may also be prerequisites for courses in the major subject. These courses generally would focus on foundational theories, concepts, perspectives, principles, methods, and procedures of critical thinking in order to provide a broad basis for taking up more advanced courses. These courses seek to equip students with the general education needed for advanced study, expose students to the breadth of different fields of study; provide a foundation for specialized higher-level coursework; acquaint students with the breadth of (inter) disciplinary fields in the arts, humanities, social sciences, and natural sciences, and to the historical and contemporary assumptions and practices of vocational or professional fields; and to lay the foundation for higher level coursework.

**200-299:** Intermediate-level courses including subject-specific courses intended to meet the credit requirements for minor or major areas of learning. These courses can be part of a major and can be pre-requisite courses for advanced-level major courses.

**300-399:** Higher-level courses which are required for majoring in a disciplinary/interdisciplinary area of study for the award of a degree.

**400-499:** Advanced courses which would include lecture courses with practicum, seminar-based course, term papers, research methodology, advanced laboratory experiments/software training, research projects, hands-on-training, internship/apprenticeship projects at the undergraduate level or First year Postgraduate theoretical and practical courses.

**500-599:** Courses at first-year Master's degree level for a 2-year Master's degree programme

**600-699:** Courses for second-year of 2-year Master's or 1-year Master's degree programme

**700 -799 & above:** Courses limited to doctoral students