

**KURUKSHETRA UNIVERSITY**  
**KURUKSHETRA**  
**(“A+” Grade Accredited by NAAC)**

**Scheme of VAC-2 course for**  
**Under-Graduate Programme**  
**(Subject: Environmental Science)**

**Under Multiple Entry-Exit, Internship and**  
**CBCS-LOCF in accordance to NEP-2020**  
**w.e.f. 2023-24 (in phased manner)**

**INSTITUTE OF ENVIRONMENTAL STUDIES,  
KURUKSHETRA UNIVERSITY, KURUKSHETRA**

**Scheme of VAC course Subject: Environmental Science for Under-Graduate Programme  
Under Multiple Entry-Exit, Internship and CBCS-LOCF in accordance to NEP-2020  
w.e.f. 2023-24 (in phased manner)**

| <b>FIRST YEAR: SEMESTER-1/ SEMESTER-2</b> |                     |                 |                              |                |                   |                       |                       |                    |                      |
|---|---------------------|-----------------|------------------------------|----------------|-------------------|-----------------------|-----------------------|--------------------|----------------------|
| <b>Remarks</b>                            | <b>Course</b>       | <b>Paper(s)</b> | <b>Nomenclature of Paper</b> | <b>Credits</b> | <b>Hours/Week</b> | <b>Internal marks</b> | <b>External Marks</b> | <b>Total Marks</b> | <b>Exam Duration</b> |
| <b>Scheme A, B &amp; C</b>                | <b>VAC 2 credit</b> | B23-VAC-201     | Environmental Studies        | 2              | 2                 | 15                    | 35                    | 50                 | 3 hrs.               |
|   |                     |                 |                              |                |                   |                       |                       |                    |                      |

**VAC 2 B23-VAC-201**

| <b>Session: 2023-24</b>                                       |  |                      |       |
|---|--|----------------------|-------|
| <b>Part A - Introduction</b>                                  |  |                      |       |
| Subject   | Environmental Science  |                      |       |
| Semester  | I/ II  |                      |       |
| Name of the Course  | <b>Environmental Studies</b>   |                      |       |
| Course Code   | <b>B23-VAC-201</b>   |                      |       |
| Course Type:<br>(CC/MCC/MDC/CC-M/DSEC<br>/VOC/DSE/PC/AEC/VAC) | <b>VAC</b>   |                      |       |
| Level of the course (As per<br>Annexure-I)                    | 100-199  |                      |       |
| Pre-requisite for the course (if<br>any)                      | NA   |                      |       |
| Course Learning Outcomes (CLO):                               | <p>After completing this course, the learner will be able to:</p> <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>Time: 2 hours</b> |       |
| <b>Internal Assessment Marks: 15</b>                          |  |                      |       |
| <b>End Term Exam Marks: 35</b>                                |  |                      |       |
| <b>Part B- Contents of the Course</b>                         |  |                      |       |

**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.

| Unit | Topics   | Contact Hours |
|------|--|---------------|
| I    | <p><b>Introduction to environmental studies:</b><br/>Multidisciplinary nature of environmental studies; Scope and importance; Concept of sustainability and sustainable development.</p> <p><b>Ecosystems:</b><br/>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).</p>  | 02 hours/week |
| II   | <p><b>Natural resources: Renewable and Non- renewable Resources</b><br/>Land resources: Land degradation and soil erosion.<br/>Forest resources: Importance of forests, deforestation: causes and impacts on environment.<br/>Water resources: Use and over- exploitation of surface and ground water.<br/>Energy resources: Renewable and non- renewable energy sources.</p> <p><b>Biodiversity and Conservation:</b><br/>Definition and its types, Endangered and endemic species of India.<br/>Threats to biodiversity: Habitat loss, poaching of wildlife, man- wildlife conflicts, biological invasions; Conservation of biodiversity: In-situ and Ex- situ conservation of biodiversity.<br/>Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and informational values.</p> |               |
| III  | <p><b>Environmental pollution</b><br/>Environmental pollution: types, causes, effects and controls; Air, water, soil and noise pollution.<br/>Solid waste management: Sources, methods of disposal: Landfill, incineration and composting.<br/>Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture.</p> <p><b>Environmental Policies &amp; Practices</b><br/>Environmental laws: Environment (Protection) Act, 1986, Air</p>   |               |

|  |   |  |
|--|---|--|
|  | (Prevention & Control of Pollution) Act, 1981, Water (Prevention and control of Pollution) Act, 1974.   |  |
| IV   | <p><b>Human Communities and the Environment:</b><br/> Human population growth: Impacts on environment, human health and welfare.<br/> Resettlement and rehabilitation of project affected person.<br/> Disaster management: floods, earthquake, cyclones, landslides and drought.<br/> Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.</p> |  |
| <b>Suggested Evaluation Methods</b>  |   |  |
|  | <p style="text-align: center;"><b>Internal Assessment:15 marks</b></p> <p>➤ <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 style="text-align: center;"><b>End Term Examination:</b></p> <p>Theory: 35 marks<br/>(Written exam)</p> |
| <b>Part C-Learning Resources</b>   |   |  |
| <b>Recommended Books/e-resources/LMS:</b>  |   |  |
| <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> |   |  |