

**SYLLABUS FOR ENVIRONMENTAL STUDIES (UNDER GRADUATE COURSES)**

Environmental studies has been made a compulsory core module in the syllabus framed by the UGC for all Indian universities and colleges, following the directive of the Hon’ble Supreme Court. The Court emphasized that environmental conservation should be a national priority and integrated into the education process. In line with Kuvempu University regulations, the State Educational Policy, and the recommendations of the Board of Studies, the following details are to be implemented mandatorily.

This module comprises **4** units, covering **48** lecture hours, including both classroom instruction and fieldwork. It aims to raise awareness, enhance knowledge, and develop skills, along with fostering environmental attitudes and ethics. The course enables students to understand the environment holistically and encourages proactive participation in environmental conservation.

Subject	ENVIRONMENTAL STUDIES	Semester
Course	Faculty of Arts and Science (B. Sc/B. A/ BSW /BCA)	I
	Faculty of Commerce & Management B. Com/BBA/BBA(T&T)	II

1. This pattern helps in distributing the workload of teachers of Environmental Studies to both **I and II semesters** enabling the distribution of the **teaching workload of an institution for full academic year**; ensures distribution of examinations into two semesters; also provide scope for a full-time teacher of the subject.
2. **Eligibility to teach Environmental Studies:** A candidate with minimum qualifications of M.Sc. in Environmental Science subject only is eligible to teach Environmental Studies at the under graduate level in all Autonomous, Government, Aided and Private Colleges which are affiliated to Kuvempu University. **Preference may be given to the candidates with UGC-NET/K-SET/Ph.D. in Environmental Science.** However, when such candidate is not available, teachers of the subjects listed below may be preferred to teach **ONLY ENVIRONMENTAL STUDIES** paper in the following order:
  - **Biological Sciences:** Botany/Zoology/Microbiology/Biotechnology/Life Sciences/ Bio-Chemistry
  - **Chemical Sciences and Earth Sciences:** Chemistry/Geology/Earth Sciences
3. **Pattern of Examination:** Total marks – **100** (Internal Assessment - 20 marks and Final Examination - 80 marks).

## I. Summative Marks Distribution

Formative Assessment for Theory	
Assessment type	Marks
C-1: Internal assessment Tests	10
C-2: 1. Assignment /Field Report 2. Attendance	05 05
<b>Total</b>	<b>20 marks</b>
<b>Formative Assessment as per SEP Guidelines</b>	

## II. Term End Examination: Paper will be for maximum of 80 marks.

Section – A: Short Answer questions

Section – B: Medium Answer Questions

Section – C: Long Answer Questions

4. **Duration of the examination:** Three (03) hours

5. **Teaching hours and credits:** 4 hours of teaching per week and 3 credits.

## ENVIRONMENTAL STUDIES

### Course Learning Objectives:

- This course aims to provide students with a comprehensive understanding of the fundamental principles of environmental studies, including the different types and segments of the environment, the dynamics of weather and climate, the causes and impacts of global climate change, and the key international policies and frameworks addressing climate change, with an emphasis on the role of individuals in promoting sustainability.
- Gain an understanding of the scope and importance of environmental studies, ecosystem structures and functions, and the characteristics of terrestrial and aquatic ecosystems, with an emphasis on sustainability and sustainable development.
- Understand the types and impacts of renewable and non-renewable natural resources, deforestation, water and energy use, biodiversity patterns, threats to biodiversity, and conservation methods.
- Identify the types, causes, effects, and controls of environmental pollution, including air, water, soil, noise, and solid waste; understand key environmental policies and their impacts; and explore major environmental laws and international agreements, as well as issues related to nature reserves, tribal populations, and human-wildlife conflicts in India.
- Analyze the effects of human population growth on the environment, health, and welfare; understand resettlement and rehabilitation through case studies; and explore disaster management for floods, earthquakes, cyclones, and landslides. Investigate key environmental movements, ethical values, and the influence of religions and cultures on conservation, as well as the role of environmental communication and public awareness through case studies and fieldwork.

### Course Outcome:

- Students will gain a comprehensive understanding of the scope and significance of environmental studies, including ecosystem structures and functions, and the characteristics of terrestrial and aquatic ecosystems, with a focus on sustainability and sustainable development.

- b. Students will understand the types and impacts of renewable and non-renewable natural resources, the effects of deforestation, water and energy use, and biodiversity patterns. They will also learn about threats to biodiversity and various conservation methods.
- c. Students will identify the types, causes, effects, and controls of environmental pollution, including air, water, soil, noise, and solid waste. They will also comprehend key environmental policies, major environmental laws, international agreements, and issues related to nature reserves, tribal populations, and human-wildlife conflicts in India.
- d. Students will analyze the effects of human population growth on the environment, health, and welfare. They will understand resettlement and rehabilitation processes through case studies, explore disaster management strategies, investigate environmental movements, and evaluate the role of environmental ethics, religions, and cultures in conservation. Additionally, they will learn the importance of environmental communication and public awareness through case studies and fieldwork.

## ENVIRONMENTAL STUDIES

Number hrs/week	Duration of the exam	Total hours	Credits
<b>4 hours</b>	<b>3 hours</b>	<b>48</b>	<b>3</b>
<b>Formative assessment Marks: 20</b>		<b>Semester end assessment Marks: 80 + 20 = 100</b>	
<b>Content of Environmental Studies</b>			<b>48 hours</b>
<b>Unit 1:</b>	<p><b>Introduction to Environmental Studies:</b> Multidisciplinary nature of environmental studies, Scope and importance; Concept of sustainability &amp; sustainable development and Goals</p> <p><b>Ecosystem:</b> Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs, ecological pyramids and ecological succession.</p> <p><b>Terrestrial Ecosystems:</b> Forest ecosystem, Grassland ecosystem, Desert ecosystem,</p> <p><b>Aquatic ecosystems;</b> ponds, streams, lakes, rivers, oceans, estuaries</p>	12	
<b>Unit 2:</b>	<p><b>Natural Resources: Renewable and Non-Renewable Resources:</b></p> <p><b>Land resources:</b> Land-use and land cover change; Land degradation, desertification, soil erosion and control measures.</p> <p><b>Forest Resources:</b> Types and scope; Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity, and tribal populations.</p> <p><b>Water Resources:</b> Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international &amp; inter-state).</p> <p><b>Energy resources:</b> Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.</p> <p><b>Biodiversity and Conservation:</b> Levels of biological diversity: Genetic, species and ecosystem diversity; Biogeographic zones of India</p> <p>Biodiversity patterns and global biodiversity hot spots. India as a mega-biodiversity nation; Endangered and endemic species of India.</p> <p><b>Threats to biodiversity:</b> Habitat loss, poaching of wildlife, man-wildlife conflicts with case studies, biological invasions; Conservation</p>	12	

	of biodiversity: In-situ and Ex-situ conservation of biodiversity.	
<b>Unit 3:</b>	<p><b>Environmental pollution:</b> types, causes, effects and controls; Air, water, soil and noise pollution, nuclear hazards and human health risks, <b>Solid waste;</b> management and control measures of urban and industrial waste with case studies.</p> <p><b>Environmental Policies and Practices:</b> Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture.</p> <p>Environment Laws: Environment Protection Act; Air (Prevention &amp; Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).</p> <p>Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context.</p>	12
<b>Unit 4:</b>	<p><b>Human Communities and the Environment:</b> Human population growth: Impacts on environment, human health and welfare. Resettlement and rehabilitation of project affected persons; case studies.</p> <p><b>Disaster management:</b> floods, earthquake, cyclones and landslides with case studies.</p> <p><b>Environmental movements:</b> Chipko and Appiko movement, Silent valley, Bishnois of Rajasthan.</p> <p><b>Environmental ethics:</b> Ecological, economic, social, ethical, aesthetic and Informational value. Role of Indian and other religions And cultures in environmental conservation.</p> <p>Environmental communication and public awareness, case studies - CNG vehicles in Delhi).</p> <p><b>Field work – (Field report to be submitted)</b></p>	12

**Pedagogy:**

**Teaching Strategies:** Use of Digital tools and platforms for teaching, learning and field/ dissertation analysis. Inquiry-based learning, group discussions, Interactive Lectures, quiz, group work, Field –oriented studies, Study trip, case studies and debates, hands on training.

**Continuous Assessment and Evaluation:** Formative and Summative Assessments, Feedback and oral examinations

<b>Formative Assessment for Theory</b>	
<b>Assessment type</b>	<b>Marks</b>
Internal Tests	10
Assignment /Field Report	05
Attendance	05
<b>Total</b>	<b>20 marks</b>
<b>Formative Assessment as per SEP Guidelines</b>	

## Reference

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## Scheme of Examination

I/II Semester Examination (Semester),.....MONTH .....YEAR

**PAPER TITLE: ENVIRONMENTAL STUDIES**

**Duration: 3 Hours**

**Max. Marks: 80**

*Instruction: Answer all Sections*

**Section –A: Short answer Questions**

**(10 x 2 = 20)**

All questions are compulsory

1. (a).
- (b).
- (c).
- (d).
- (e).
- (f).
- (g).
- (h).
- (i).
- (j).

**Section – B: Medium Answer Questions**

**(6 x 5 = 30)**

Answer any **SIX** questions.

- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.

**Section – C: Long Answer Questions**

**(3x 10 = 30)**

Answer any **THREE** questions.

- 11.
- 12.
- 13.
- 14.
- 15.

*Note: While drawing questions, all the units in the syllabus must be given equal weightage.*

**Date:11/09/2024**

**Chairman**

**(Prof. Yogendra K)  
BOS in Environmental Science (UG)**