# RAJ RISHI GOVT. (AUTONOMOUS) COLLEGE, ALWAR (RAJ.)

(An Autonomous Institute Affiliated to RRBMU, Alwar)





# THREE/FOUR YEAR UNDERGRADUATE PROGRAMME FACULTY OF SCIENCE

**Programme: Undergraduate Degree** 

Syllabus of Value Added Course

Medium of Instruction: Hindi/English
(Syllabus as per NEP-2020 and Choice Based Credit System)

(Academic Year 2023-24 Onward)

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#### **Environmental Studies - I**

#### Semester - I

Code of the course	Title of the course	Type of the course	Teaching Hours/Week	Credits
	Environmental Studies - I	Value Added Course	2	2

#### Scheme of Examination: -

Maximum Marks

= 50

Minimum Marks

= 20

Continuous Assessment (CA) = Maximum Marks = 10

Minimum Marks = 4

Term Test

= 6 Marks (Duration - 1 Hour)

Home Assignment = 4 Marks

End of Semester Exam (EoSE) - Maximum Marks = 40

Minimum Marks = 16

Exam duration: 1:30 Hours duration

Exam pattern:

Multiple Choice Question = 10

Short answer question = 5

Essay type question = 1

<b>Objectives</b>
of the
Course:

To make students aware about the importance of physical environment and its various components.

To make students realize their role in the protection and maintenance of a healthy

environment for sustainable development.

To understand the significance and issues related to natural resources, ecosystems, biodiversity to encourage them to explore ways of managing/conserving natural resources.

To develop understanding of causes and sources of environmental pollution and their impact on quality of life. To educate the young minds about environmental movements and laws

To encourage to adopt sustainability as a practice in life, society, and industry.

#### Course Learning **Outcomes:**

At the end of the course, students will:

Gain in-depth knowledge on natural processes and resources that sustain life and govern economy.

Develop critical thinking to shape strategies (scientific, social, economic, administrative, and legal) for environmental protection, conservation of biodiversity, protection of natural resources and sustainable development.

Understand and predict the consequences of human actions on the environment and quality of human life. Acquisition of values and attitudes towards understanding complex environmental economic-social challenges, and actively participate in solving current environmental problems and preventing the future ones.

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#### Environmental Studies - I Semester- I

Total Theory Hours - 30

#### The Multidisciplinary nature of environmental studies

- Definition Scope and importance relationship between environmental studies and other branches of science and social science
- Need for environmental awareness, environmental education in present day context **Environmental Pollution and Control Measures** 
  - Definition, Causes, effects and control measures of
  - a. Air Pollution
  - b. Water Pollution
  - c. Soil Pollution
  - d. Marine Pollution
  - e. Noise Pollution
  - f. Thermal Pollution
  - g. Nuclear Hazards
  - Solid waste management" Causes, effects and control measures of urban and industrial wastes
  - Role of an individual in prevention of pollution
  - Pollution case studies
  - Disaster management: floods earthquake, cyclone and landslides Unit

#### Social issues, Environment, Laws and Sustainability

- From Unsustainable to Sustainable development
- Urban problems related to energy
- Water conservation, rain water harvesting, watershed management Resettlement and rehabilitation of people; its problems and concerns.
- Environmental ethics: Issues and possible solution.
- Climate change, global warming, acid rain ozone layer depletion accidents and holocaust. Case studies
- Wasteland reclamation.
- Consumerism and waste product.
- Environmental Protection Act.
- Air (Prevention and Conţrol of Pollution) Act
- Wild life protection Act
- Forest Conservation Act
- Biological Diversity Act
- Issues involved in enforcement of environmental legislation
- Public Awareness.

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#### **Human Population and the Environment**

- Population growth, variation among nations
- Population explosion-Family Welfare Programme
- Environment and Human health
- Human Rights
- Value Education
- HIV/AIDS
- Women and Child Welfare
- Role of Information Technology in Environment and human health
- Case Studies

#### Suggested Readings: -

- 1. Chauhan. Surendra Singh 2004 Environmental Protection and Management: From Stockholm to Rio and After, Kalinga Publications, New Delhi.
- 2. Diwan A.P. and Arora D.K. 1995. Human Ecology Anmol Publication Pvt. Ltd., New Delhi.
- 3. Dubey, R.M. 1992. Human Ecology and Environmental Education, Chaugh Publications, Allahabad.
- 4. Goudie, Andrew. The Human Impact.
- 5. Husain Maxin 1994 Human Geography, Rawat Publication, Jaipur.
- 6. Sinha Rajiv, 1996 Global Biodiversity Ina. Shri publication, Jaipur
- 7. Malik, S. L. and Bhattacharya D. K. 1986. Aspects of Human Ecology, Northern Book Center, New Delhi.
- 8. Smith, Dlanne, 1984. Urban Ecology. George Allen, London.
- 9. Swarnkar, R.C 1985. Indian Tribes Printwell out
- 10. Tivy, Joy and O'Hugegreg, 1985. Human Impact on the Ecosystem Edinburgh George Allen Boyd.

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### **Environmental Studies - I**

(Semester I)

# Format of the Question Paper

Time - 1.30 Hours Max.		Marks - 40	
Q. 1. (Multiple Choice Questions) Attempt all.			
(I)			
(A)	(B)		
(C)	(D)		
(II)	` /		
(III)			
(IV)			
(V)			
(VI)			
(VII)			
(VIII)			
(IX)			
(X)			
		$(1 \times 10 = 10)$	
Q. 2. (Short Answer Type Questions) Attempt a	ny five. Word limits 100 words for ea	ich.	
(I)	***************************************		
(II)	***************************************		
(III)			
(IV)	***************************************		
(V)	W		
(VI)			
(VII)			
(VIII)			
		$(4 \times 5 = 20)$	
Q. 3. (Essay Type Questions) Attempt any one. \	Nord limits 500 words.	10	
(I)			
(II)			

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#### **Environmental Studies - II**

#### Semester - II

Code of the course	Title of the course	Type of the course	Teaching Hours/Week	Credits
	Environmental Studies - II	Value Added Course	2	2

#### Scheme of Examination: -

Maximum Marks

= 50

Minimum Marks

= 20

Continuous Assessment (CA) = Maximum Marks = 10

Minimum Marks = 4

Term Test

= 6 Marks (Duration - 1 Hour)

Home Assignment =4 Marks

End of Semester Exam ( EoSE) - Maximum Marks = 40

Minimum Marks = 16

Exam duration: 1:30 Hours duration

Exam pattern:

Multiple Choice Question = 10

Short answer question = 5

Essay type question = 1

<b>Objectives</b>
of the
Course:

To make students aware about the importance of physical environment and its various components.

To make students realize their role in the protection and maintenance of a healthy

environment for sustainable development. To understand the significance and issues related to natural resources, ecosystems,

biodiversity to encourage them to explore ways of managing/conserving natural resources.

To develop understanding of causes and sources of environmental pollution and their impact on quality of life. To educate the young minds about environmental movements and laws.

To encourage to adopt sustainability as a practice in life, society, and industry.

#### Course Learning Outcomes:

At the end of the course, students will:

Gain in-depth knowledge on natural processes and resources that sustain life and govern economy.

Develop critical thinking to shape strategies (scientific, social, economic, administrative, and legal) for environmental protection, conservation of biodiversity, protection of natural resources and sustainable development.

Understand and predict the consequences of human actions on the environment and quality of human life. Acquisition of values and attitudes towards understanding complex environmental economic-social challenges, and actively participate in solving current environmental problems and preventing the future ones.

# Environmental Studies -II Semester II

Total Theory Hours - 30

#### **Natural Resources and Challenges**

- Natural resources and assorted problem, ramification of resources renewable resources, nonrenewable resources, classes of earth resources, resources regions Definition and criteria, retiree conservation.
- Forest resources Use and over exploitation, deforestation, case studies. Limber extraction, mining, dams and the fleet on forest and tribal people.
- Water recourses Use and over-libation of fund groundwater, floods, drought conflicts or water, duress benefits in problems.
- Mineral resources. Use and entertain rental elect, of extracting and using mineral rescuers case studies.
- Food resources World food problems, changes caused by agriculture and ever razing effects of modern agriculture, fertilizer-pesticides problems, Water logging, salinity, case studies.
- Energy resource Growing energy need, renewable and non-renewable energy sources, use of alternate energy sources -Case studies.
- Land resources: Land as a resource, Land degradation man induced Landslides, soil erosion and desertification.
- Role of an individual in conservation of natural resources.
- Equitable use of resources for sustainable lifestyles.

#### **Ecosystem: Concept, Structure, Functions and Types**

- Structure and function of an ecosystem
- Producers, consumers and decomposers
- Energy flow in the ecosystem
- Ecological succession
- Food chains, food webs and ecological pyramids
- Introduction, types, characteristics features, structure and function of the following ecosystems:
  - a. Forest ecosystem. Tropical Temperate and Alpine Ecosystem
  - b. Grassland ecosystem and Their Types
  - c. Desert ecosystem with emphasis on Thar Desert
  - d. Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

#### Biodiversity and its conservation

- Introduction, genetic, species and ecosystem diversity
- Biogeographically classification of India
- Value of biodiversity consumptive use, productive use, social ethical, aesthetic and option values
- Biodiversity at global, National and local level
- India as a mega-diversity nation
- Hot-spots of biodiversity
- Threats to biodiversity, habitat loss, pouching of wildlife, man-wild life conflicts
- Endangered, Threatened and endemic species of India
- Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity
- Red Data Book

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#### Suggested Readings: -

- 1. Chauhan. Surendra Singh. 2401 Biodiversity, piracy and Biopolitics: The Global Perspectives, Kalinga Publications, New Delhi
- 2 Chauhan. Surendra Singh 2004 Environmental Protection and Management: From Stockholm to Rio and After, Kalinga Publications, New Delhi.
- 3. Diwan A.P. and Arora D.K. 1995. Human Ecology Anmol Publication Pvt.Ltd., New Delhi.
- 4. Dubey, R.M. 1992. Human Ecology and Environmental Education, Chaugh Publications, Allahabad.
- 5. Goudie, Andrew. The Human Impact.
- 6. Husain Maxin 1994 Human Geography, Rawat Publication, Jaipur.
- 7. Vannathony & Rogers Paul, 1974, Human Ecology and WorldDevelopment Flehum Press, New York.
- 8. United Nations Development Report. 1996 Human Development Report, 1996.Oxford University Press, Delhi.
- 9. Mishra, R.P and Bhooshan, B.S. 1979. Human Settlements in Asia Public, Polices and programmes Haritage publisher, New Delhi.
- 10.Nathawat, G.S. 1985. Human Ecology, An Indian perspective, Indian Human Ecology Council, Jaipur.
- 11 Russel, Bartrand, 1976.Impact of Science of society Unwin, Publisher, Indian.(paper back).
- 12. Sinha Rajiv, 1996 Gloobal Biodiversity Ina.. Shri publication, Jaipur.
- 13. Sinha Rajiv K., 1994. Development without Desertrction
- 14. Environmentalist, Jaipur. Sinha Rajiv K., 1996. Environmental Crises and Human at Risk.In A Shri Publication, Jaipur.

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# Environmental Studies -II

(Semester II)

# Format of the Question Paper

Time - 1.30 Hours	Max. Marks - 40
Q. 1. (Multiple Choice Questions) Attempt all.	
(I)	
(A) (B)	
(C) (D)	
(II)	
(III)	
(IV)	222713
(V)	
(VI)	
(VII)	******
(VIII)	
(IX)	
(X)	
8	$(1 \times 10 = 10)$
Q. 2. (Short Answer Type Questions) Attempt any five. Word limits 100 word	ds for each.
(I)	
(II)	
(III)	итие
(IV)	
(V)	
(VI)	
(VII)	
(VIII)	
	(4×5=20)
Q. 3. (Essay Type Questions) Attempt any one. Word limits 500 words.	10
(I)	300000
(II)	

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