

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)

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

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 Control 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, Chaug 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, Dianne, 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).....

(1×10=10)

Q. 2. (Short Answer Type Questions) Attempt any five. Word limits 100 words for each.

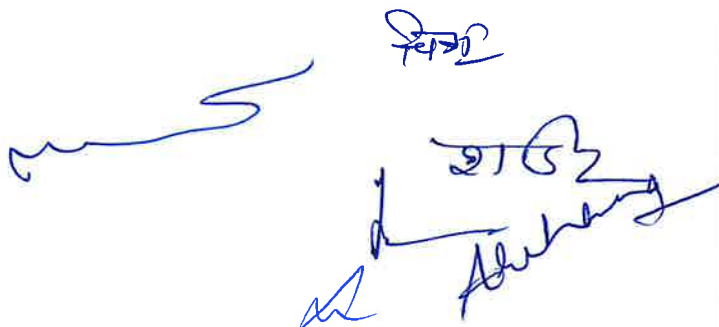
- (I).....
- (II).....
- (III).....
- (IV).....
- (V).....
- (VI).....
- (VII).....
- (VIII).....

(4×5=20)

Q. 3. (Essay Type Questions) Attempt any one. Word limits 500 words.

10

- (I).....
- (II).....



Environmental Studies -II Semester II

Total Theory Hours - 30

Natural Resources and Challenges

- Natural resources and assorted problem, ramification of resources renewable resources, non-renewable 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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शास्त्र
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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).....
- (V).....
- (VI).....
- (VII).....
- (VIII).....
- (IX).....
- (X).....

(1×10=10)

Q. 2. (Short Answer Type Questions) Attempt any five. Word limits 100 words for each.

- (I).....
- (II).....
- (III).....
- (IV).....
- (V).....
- (VI).....
- (VII).....
- (VIII).....

(4×5=20)

Q. 3. (Essay Type Questions) Attempt any one. Word limits 500 words.

10

- (I).....
- (II).....

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