

**SRI VENKATESWARA UNIVERSITY:TIRUPATI**  
**B.Sc ENVIRONMENT SCIENCE (MINOR)**  
**SEMESTER-III - W.E.F.2024-25**  
**COURSE 2: NATURAL RESOURCES**

**Theory**

**Credits:3**

**3hrs/week**

**Learning Objectives**

This course provides an overview of natural resources, their sustainable management, and the socio-economic implications of resource use. Topics covered include renewable and non-renewable resources, ecosystem services, conservation strategies, and sustainable development practices.

**Learning Outcomes**

- The goal of the course is to teach a critical and conceptual knowledge of natural resources.
- To describe the concept of natural resources and their significance for human well-being
- Evaluate the sustainability of resource use practices and their impacts on ecosystems and communities
- Understand how human culture has been affected by natural environment
- Apply principles of natural resources to address environmental challenges and promote sustainable development
- The goal of the course is to provide the resources for future generations

**Unit1 –Introduction of Natural Resources**

**No. of Hours: 9**

Definition – Types - Importance –Classification of natural resources, Human Population Explosion – Natural Resource Degradation – Concept of conservation, Equitable resource use for sustainable life system, Role of an individual for Conservation of natural resources

**Unit II-Forest Resources**

**No. of Hours: 9**

Importance -Uses and over-exploitation of forest – causes and environmental effects of Deforestation; Timberextraction – Mining, dams and other effects on forest and tribal. Forest Fires and their control; Forest conservation: – Afforestation – Vanasamrakshna Samithi in A.P. – Agroforestry – Social Forestry – Joint Forest Management Strategy for Forest Conservation. Chipko and Appiko Movements

### **Unit III-Water Resources and Food Resources**

**No. of Hours: 9**

**Water Resources:** Water resources in India, uses, over utilization of water resources and its effects, water conflicts in India. Dams: Benefits and Problems, - Water conservation Strategies in India -Watershed management; Rain Water Harvesting. Namami Ganga action plan, hydrological cycle

**Food Resources:** World food problems, green revolution, modern agriculture and its impacts – Chemical Fertilizer and pesticide related problems - water logging – salinity.

### **Unit IV-Mineral Resources and Land Resources**

**No. of Hours: 9**

**Mineral Resources:** Types, Uses and over exploitation of minerals, mining of minerals and impact on environment

**Land Resources:** Formation of soil - composition of soil - factors influence in the soil formation, causes and effects of land degradation and desertification and control measures - Soil erosion: causes-Types and its impacts- Control measures, Soil conservation and Land reclamation.

### **Unit V-Energy Resources**

**No. of Hours: 9**

Definition and Classification of energy resources, Renewable energy (solar, wind, tidal and waves and Ocean thermal energy, hydropower, Geothermal, biogas,) and non-renewable- fossil fuels (coal, petroleum natural gas) and nuclear energy and importance of renewable energy resources

### **Skills Outcome**

**On Successful Completion of this paper, Student will be able to**

1. To understand the concept of natural resources and their classification.
2. Learn about Forest Resources and its conservation
3. Learn about Namami ganga action plan
4. Learn about Water conservation Strategies in India
5. Learn about green revolution uses and effects
6. Learn about need of Renewable energy sources in present days

**SRI VENKATESWARA UNIVERSITY:TIRUPATI**  
**B.Sc ENVIRONMENT SCIENCE (MINOR)**  
**SEMESTER-III - W.E.F.2024-25**

**COURSE 2: NATURAL RESOURCES**

**Practical** **Credits: 1** **2hrs/week**

---

1. Collection of soil samples from different sites to analyze soil properties and composition
2. Collection of water samples from ponds, streams, rivers, or lakes for laboratory analysis of water quality parameters
3. To study the soil profile for their color, texture and structure
4. Estimation of organic matter in soil
5. Determination of water holding capacity in soil samples
6. Field trip to forests for Awareness on medicinally important plants
7. Visit to rainwater harvesting (water percolation tank)

**Reference:**

1. S C Santra., Environmental Sciences, New Central Book Agency (P) Ltd. (2005).
2. R.C.Sharma, Gurbirsangha ,Environmental studies ,published by kalyani publishers,
3. Trivedi R.K., Environment and Natural Resources Conservation, (1994).
4. Nalini K.S., Environmental Resources and Management, Anmol Publishers, New Delhi (1993).
5. Purnimasmarath, Environmental studies published by kalyani publishers.
6. Tiwari G.N. and Ghosal M.K., Renewable Energy Resources, Narosa (2005).
7. Rai G.D., Non-conventional Energy Sources, Khanna Publishers (2001).
8. Trivedi R.P. and Gurudeep Raj, Encyclopedia of Environmental Sciences – Environmental Energy Resources.
9. Anubha Kaushik., C P Kaushik., Environmental studies, New age international publishers III edition, 2010.

**CO-Curricular Activities**

**a) Suggested Co-Curricular Activities**

1. Provide resources and mentorship to help students organize events, campaigns, and community service projects related to natural resources
2. Seminars, Quiz, Group Discussions on related topics
3. Guest lectures by subject experts
4. Paper clips collection

**SRI VENKATESWARA UNIVERSITY: TIRUPATI**  
**B.Sc ENVIRONMENT SCIENCE (MINOR)**  
**SEMESTER-III - W.E.F.2024-25**

**PAPER – 2: NATURAL RESOURCES**  
**MODEL QUESTION PAPER**

**Time: 3 Hours**

**Max. Marks: 70**

**Section-A**

**Answer Any Four Questions. Each question carries 5 marks (4X5= 20M)**

1. Write a brief note on suitable resources use in lifestyles.
2. Explain the concept of joint forest management strategy
3. Describe hydrological cycle.
4. Write the various Impact of mining of minerals on environment.
5. Explain the solar pond and photovoltaic cell.
6. Write the importance and need of nonconventional energy sources
7. Green revolution

**Section-B**

**Answer ANY questions. Each question carries 10 marks (5X10= 50M)**

8. (a) Give an account on definition, types and significance of Natural Resources

**Or**

- (b) Explain role of an individual for conservation of natural resources

9. (a) Explain the conservation measures for the protection of forest resources.

**Or**

- (b) Describe deforestation, explain causes and effects of deforestation

10. (a) Explain rain water harvesting and watershed management

**Or**

- (b) Effects of chemical fertilizers and pesticides in modern Agriculture

11. (a) Explain land degradation and desertification and control

**Or**

- (b) Explain mineral resources impact on environment

12. (a) Explain renewable energy resources in detail

**Or**

- (b) Write about non-renewable energy resources