CLUSTER UNIVERSITY SRINAGAR

SYLLABUS (FYUP UNDER NEP 2020)

Offered By Department Of ENVIRONMENTAL SCIENCES

Semester 2nd (Major Course)

Course Title: Natural Resources

Course Code: UGENS22J201 **Max. Marks 100**
UNIT s: 4 (Theory: 3, Practical: 1) **Theory External: 60; Min Marks: 24**
Contact Hrs:75 (Theory: 45, Practical: 30) **Theory Internal (Continuous Assessment): 15 Marks, Min Marks: 06**
Practical Experimental Basis= 15, Min. Marks: 06
Practical Experimental (Continuous assessment) = 10, Min. Marks: 04

Learning Objectives:
Students will be able:
1. To acquire knowledge about our natural resources and issues related to Natural resources.
2. To acquire insight about resource assessment.

Learning Outcomes:
After the completion of the syllabus, the students will have
1. Broad understanding of various natural resources.
2. Know how of economic importance, assessment techniques and sustainability of natural resources.

UNIT I. Fundamentals of Natural Resources **(15 Hours)**

1.1. Natural resources: Definition, classification and importance.
1.2. Major Natural Resources: Global distribution.
1.3. Natural resource Economics (Elementary idea).
1.4. Natural resources depletion (Concept and contributing factors).
1.5. Natural resource Management - Basic Principles.

UNIT II. Water, Soil and Energy Resources **(15 Hours)**

2.1 Water resources - Global perspective.
2.2 Major Soil Types in India.
2.3 Energy resources: Conventional and Non- Conventional.
2.4 Energy Crisis.
2.5 Mineral Resource- Classification and distribution (National).

UNIT III. Bio-Resources **(15 Hours)**

3.1. Concept and importance of bio resources.
3.2. Plant resources-forest, medicine and agriculture.
3.3. Animal resources -livestock and fisheries.
3.3. Microbial resources-bacteria and fungi.
3.4. Biofuels.

PRACTICALS (Laboratory course) **(30 Hours)**

1. Estimation of tree height, diameter and litter biomass.
2. Determination of IVI of common plant species of an ecosystem.
3. Collection and preparation of Herbarium of local important medicinal plants.
4. Evaluation of per capita water consumption of an institution.
5. Estimation of texture of different soils using standard method.
6. Identification of major rock types.
7. Estimation of calorific value of different food / fuel samples.
8. Visit to Mining area.

Suggested Readings:

1. Environmental Science: Botkin, Keller.
2. Environmental Science: Jackson& Jackson.
3. Environmental Science: Tyler Miller.
4. Concepts of Ecology: E.J. Kormondy.
5. Ecology and Environment: P.D. Sharma.
6. Ecology, Environment and Resource Conservation, Singh, J.S. Singh. S.P. and Gupta, S.R.
7. Biodiversity of the Himalaya: Jammu & Kashmir State :Dar, G.H. and Khuroo, Anzar, A.
8. Essentials of Geology: Chernicoff, Fox, Venkatakrishnan.