CLUSTER UNIVERSITY SRINAGAR

SYLLABUS (FYUP UNDER NEP 2020)

Offered By Department Of ENVIRONMENTAL SCIENCES

Semester 1st (Major Course)

Course Title: Concepts in Environmental Sciences

Course Code: UGENS22J101 **Max. Marks 100**
Credits: 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

Leaning Objectives:
Students will be able -

1. To acquire deeper understandings of our environment.
2. To make the students aware about the origin and evolution of Earth and its life-forms.
3. To know about various chemical constituents of environment.
4. To know sustainable way of living and conserving natural resources.

Learning Outcomes:
After the completion of the syllabus, the student will gain knowledge of -

1. Relationship of man with his environment.
2. The concepts about theories, principles and terminology used in this field of science.
3. Applying disciplinary principles and practices to safeguard his surroundings.
4. Inculcating the environmental ethical education.

Unit I:
Fundamentals of Environmental Science **15 Hours**

1.1 Concept and importance of environment
1.2 Nature and scope of Environmental Science
1.3 Man-environment interrelationships
1.4 Importance of Environmental Science in present times
1.5 Environment— Basic components

Unit II:
Matter, Energy and Life **15 Hours**

2.1 Structure and composition of Earth
2.2 Origin and evolution of life on earth
2.3 Biomolecules and their importance
2.4 Geological timescale
2.5 Earth's energy balance

Unit-III:
Components of Environment **15 Hours**

3.1 Atmosphere—structure and composition
3.2 Hydrosphere—components and distribution
3.3 Lithosphere—structure and composition
3.4 Biosphere—concept and structure
3.5 Anthrosphere (built environment)

Unit IV
PRACTICAL (Laboratory Course) **30 Hours**

1. Determination of geocoordinates of a location
2. Estimation of temperature, pressure and humidity of ambient air
3. Estimation of wind velocity and precipitation
4. Determination of flow, depth and transparency of a water body
5. Sampling, identification and preservation of aquatic/ terrestrial plants
6. Identification of local fishes
7. Determination of soil texture by feel method
8. Field study of different ecosystems

Bibliography

1. Environmental Science by Botkin, Keller
2. Environmental Science by Tyler Miller
3. Essentials of Geology by Chernicoff, Fox, Venkatakrishnan
4. Environment: Principles & Applications by Chris Park
5. Ecology & Environment by P.D. Sharma
6. Atmosphere, Weather & Climate by R.G. Barry & R.J. Chorley
7. Principles of Environmental Science by Cunningham and Cunningham
8. A Text Book of Biology by Dhami, Chopra and Srivastava
9. Concepts of Biology by Sylvia S. Mader