1. Introduction to Environmental Science

BVES-151: Environmental Studies

Unit 1: Fundamentals of Environmental Science and Ecology

Topic: Introduction to Environmental Science

What is Environmental Science?

Environmental science is the interdisciplinary study of how the natural world works, how our environment affects us, and how we affect our environment.

It includes:

- Studying the interactions between living organisms (plants, animals, humans) and their surroundings (soil, air, water).
- Understanding environmental issues such as pollution, climate change, resource depletion, and biodiversity loss.
- Finding sustainable solutions for environmental challenges.

Importance of Studying Environmental Science

Aspect	Why It Matters to Us
Awareness	Understand human impact on the planet
Conservation	Learn ways to protect natural resources
Sustainability	Find solutions for long-term survival of ecosystems
Health	Recognize how environment directly affects human health
Responsibility	Inspire responsible behavior towards environment

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Components of Environmental Science

Environmental science combines multiple fields of study:

- **Ecology**: Relationships between organisms and their environment.
- **Biology**: Life processes and biodiversity.
- **Geology**: Earth's materials and processes.
- **Chemistry**: Chemical interactions in air, water, and soil.
- **Physics**: Energy flows, renewable energy.
- **Social Sciences**: Human behaviors, economics, policy-making.

Key Concepts in Environmental Science

1. Ecosystem

- A community of living organisms interacting with non-living elements (air, water, soil).

2. Biodiversity

- Variety of species in a given area.
- Essential for ecosystem stability.

3. Sustainability

- Using resources wisely so they remain available for future generations.

4. Renewable & Non-Renewable Resources

- Renewable (e.g., solar energy, wind): Naturally replenish.
- Non-renewable (e.g., coal, oil): Limited, once exhausted cannot be replaced quickly.

5. Pollution

- Harmful contamination of air, water, and soil affecting living organisms.

Major Environmental Issues

Issue	Brief Explanation
Climate Change	Global warming due to increased greenhouse gases
Deforestation	Loss of forests affecting biodiversity
Water Pollution	Contamination of water sources
Air Pollution	Harmful gases affecting health and climate
Waste Management	Improper disposal leading to environmental harm

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Environmental Science & Physiotherapy

Even as a physiotherapy student, environmental awareness is valuable because:

- A clean environment directly impacts human health and well-being.
- Awareness helps you promote healthier lifestyle choices among patients.
- Sustainable healthcare practices contribute to a healthier society.

Simple Steps You Can Take for the Environment

- Conserve water and electricity.
- Practice recycling and waste reduction.
- Choose eco-friendly transportation.
- Promote environmental education and awareness.

Quick Recap

- **Environmental science** explores interactions between humans and the natural world.
- It blends biology, ecology, geology, chemistry, physics, and social sciences.
- Understanding environmental science helps address major issues like pollution, climate change, and resource depletion.
- Sustainable actions and awareness lead to a healthier planet and people.

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Self-Check Questions

1. Define environmental science in simple terms.
2. Name three major environmental issues facing our planet.
3. Why is biodiversity important for ecosystems?
4. Give one example of a renewable and one non-renewable resource.