

# LJ UNIVERSITY

## LJ INSTITUTE OF PHARMACY

### SEMESTER: I

**Subject Name: Environmental Sciences**

**Subject Code: BP104TT**

**Scope:** Environmental Sciences is the scientific study of the environmental system and the status of its inherent or induced changes on organisms. It includes not only the study of physical and biological characters of the environment but also the social and cultural factors and the impact of man on environment.

**Objectives:** Upon completion of the course the student shall be able to

1. Create the awareness about environmental problems among learners.
2. Impart basic knowledge about the environment and its allied problems.
3. Develop an attitude of concern for the environment.
4. Motivate learner to participate in environment protection and environment improvement.
5. Acquire skills to help the concerned individuals in identifying and solving environmental problems.
6. Strive to attain harmony with Nature

**Teaching scheme and examination scheme:**

Teaching Scheme				Evaluation Scheme			
Theory	Tutorial	Practical	Total	Theory		Practical	
				External	Internal	External	Internal
3	-	-	3	35	15	-	-

Sr. No.	Course Contents	Hours
1	<b>Introduction to Environmental Studies</b> Environment, definition of ES, the multidisciplinary nature and scope of ES, Importance of ES, institutes serve to protect environment, people served/serve to protect environment.	02
2	<b>2.1 Ecosystem: Types, Structure and Functions</b> Concept of an ecosystem, Types of ecosystem (Terrestrial and Aquatic), characteristic features, structure and functions. Producers, consumers and decomposers, Energy flow in the ecosystem: Water cycle, Carbon cycle, Oxygen cycle, Nitrogen cycle, Phosphorus and Sulphur cycle Ecological succession, food chain, food web and ecological pyramids	08
3	<b>3.1 Pollution:</b> causes, effect and control measures Pollution and its types: <b>3.2 Air pollution:</b> types and sources of air pollution, causes, effects and control measures. <b>3.3 Water pollution and Marine pollution:</b> causes of water pollution, ground water pollution. <b>3.4 Noise pollution:</b> causes, effects and control measures of noise pollution. <b>3.5 Soil pollution:</b> causes of soil degradation (erosion, excess use of fertilizer and pesticides, excess salt and water), control measures. <b>3.6 Thermal Pollution:</b> effects and control measures. <b>3.7 Solid waste Management:</b> Causes, effects and control measures of urban and industrial wastes. <b>3.8 e-waste management</b> <b>3.9 Disaster management:</b> floods, earthquake, cyclone and landslides.	10
4	<b>4.1 Natural Resources: Renewable and Non renewable</b>	10

	<p><b>4.2 Renewable resources</b></p> <p><b>Water resources:</b> Use of water, problem associated with water (over-utilization of surface and ground water, floods, drought), dams benefits and problems caused by it.</p> <p><b>Forest resources:</b> forest functions, causes of deforestation and its impacts.</p> <p><b>Mineral resources:</b> use of mineral resources, stages of mining operations, consequences of mining activities.</p> <p><b>Food resources:</b> sources of food, effects of modern agriculture, problems due to fertilizer-pesticide, water logging and salinity.</p> <p><b>4.3 Non-renewable resources</b></p> <p><b>Energy resources:</b> sources and need of energy resources, renewable and non-renewable energy sources, use of alternate energy sources, approaches towards energy conservation.</p> <p><b>Land resources:</b> Land as a resource, land degradation, man induced landslides, soil erosion and desertification.</p> <p>Role of individual to in the conservation of natural resources.</p>	
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### **Text Books:**

Textbook of Environmental Studies for Undergraduate Courses by Erach Bharucha Second edition, 2013 Publisher: Universities Press (India) Private Ltd, Hyderabad.

### **Reference Books:**

- i) Basics of Environmental Studies by U K Khare, 2011 Published by Tata McGraw Hill
- ii) Basics of Environmental Studies by Prof Dr N S Varandani, 2013 Publisher: LAP -Lambert Academic Publishing, Germany
- iii) Environmental Sciences by Daniel B Botkin & Edward A Keller Publisher: John Wiley & Sons.
- iv) De A.K., Environmental Chemistry, Wiley Eastern Ltd.
- v) Agarwal, K.C.2001 Environmental Biology, Nidi Publ. Ltd. Bikaner