**Lecture Plan for Environmental Biotechnology**

| S.No | Topic | Lecture required |
|---|---|---|
| **1** | Introduction, Role of Biotechnology in Environment Protection: Introduction and current status of biotechnology in environment protection, | **2** |
| **2** | Strategies of waste management with respect to domestic industrial and hazardous wastes | **2** |
| **3** | Biodiversity: Plant and Animal diversity | **2** |
| **4** | Role of microorganisms in geochemical cycles, relevant microbiological processes, microbial ecology | **3** |
| **5** | Biological Waste Treatment: aerobic and anaerobic biological treatment | **2** |
| **6** | Removal of heavy metals by bio sorption, bioleaching: Impact of pollutants on bio treatment | **2** |
| **7** | Use of packaged microorganisms and genetically engineered organisms. | **2** |
| **8** | Bioremediation: Definition, Types of bioremediations | **2** |
| **9** | Bioaugmentation, Bio stimulation Applications of bioremediation | **2** |
| **10** | Biomarkers, Biosensors | **2** |
| **11** | Biotechnology for Hazardous Waste Management: Xenobiotic compounds, recalcitrant and hazardous waste, Biodegradation of xenobiotics. | **3** |
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| **13** | Restoration of degraded lands: Development of stress tolerant plants, use of mycorrhizae and microbes for improving soil fertility | **3** |
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| **15** | Air Pollution: Dynamic nature of air quality, Principles and practices of air quality management | **2** |
| **16** | Air treatment technologies | **2** |
| **17** | Contaminant movement in air matrices, and data analysis | **2** |
| **18** | **Novel Methods for Pollution Control: Aiming for biodegradable and eco-friendly products**. | **2** |