

M.F.Sc. Aquatic Environment Management (1st Semester)

Course: AEM-511 “Environmental Biotechnology” (1+1) Lecture Plan (Theory)

S. No.	Unit	Topics	Lecture Plan
1	Unit I Fundamentals of environmental biotechnology	Environmental biotechnology Concepts and Scope; Conventional and Modern approaches	02
2		IPR issues related to environmental biotechnology.	01
3	Unit II Environmental monitoring	Cellular and molecular markers of environmental pollution monitoring	02
4		Bioindicators; Biosensors and nano-sensors. Fisheries Science: Aquatic Environment Management	02
5	Unit III Remediation	Bioremediation	02
6		Genetically-improved/engineered organisms - Basic concepts	02
7		Applications in remediation of metals, Pesticides and hydrocarbons	02
8	Unit IV Consortia of microbes for environmental protection	Concept, Scope and Feasibility, Recombinant DNA technology	03
9		Culture independent nucleic acid-based techniques.	02
Total			18

(Dr. Mamta Singh)
Course Teacher

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Course: AEM-511 “Environmental Biotechnology” (1+1) Lecture Plan (Practical)

S. No.	Practical	Practical Plan
1	Genomic DNA isolation	02
2	Metagenomic DNA isolation	02
3	plasmid DNA isolation	01
4	Agarose Gel Electrophoresis	01
5	PCR amplification of 16S rRNA gene as a tool for biomonitoring	01
6	PCR application of functional gene implicated in bioremediation.	04
7	Screening of microbes for biodegradation properties	03
8	Case studies on wastewater treatment using biotechnological tools.	04
	Total	18

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