



Course Title: Environmental Biotechnology
Course Code:BIOT402
Credit Units: 2
Level: UG (Btech Biotech)

L	T	P/ S	SW/F W	TOTAL CREDIT UNITS
2	0	0	0	2

#	Course Title	
1	Course Objectives: To encourage the students towards a cleaner environment using various eco-friendly approaches and technologies for sustainable development	
2	Prerequisites: Microbiology, environmental sciences, ecology	
3	Student Learning Outcomes: <ul style="list-style-type: none">• The student will be able to describe and comprehend the complexity of environment and ecosystems• The developing field of biofuels will be introduced to the student.• The student will learn to identify the role of microorganisms in biological waste water treatment.	
Course Contents / Syllabus:		
4	Module I : Ecology, ecosystem and pollution	20% Weightage
	Definitions, Trophic levels, biomagnifications, various types of pollution and their effects;	
5	Module II : Renewable energy resources	40% Weightage

	Non Renewable & renewable energy resources: Bioethanol, biohydrogen, biodiesel and biogas production																							
6	Module III : Bioremediation of pollutants and wastes	40% Weightage																						
	Biodegradation and Bioremediation of major pollutants using microbes and plants; Use of microbial technology for mining of metals from ores, extraction of petroleum Various methods of solid waste management, Treatment of municipal waste water and industrial effluents																							
7	Pedagogy for Course Delivery: The class will be taught using theory.																							
8	<p>Assessment/ Examination Scheme:</p> <table border="1"> <thead> <tr> <th>Theory L/T (%)</th> <th>Lab/Practical/Studio (%)</th> <th>End Term Examination</th> </tr> </thead> <tbody> <tr> <td>100</td> <td>-</td> <td>70</td> </tr> </tbody> </table> <p>Theory Assessment (L&T):</p> <table border="1"> <thead> <tr> <th rowspan="2">Components (Drop down)</th> <th colspan="4">Continuous Assessment/Internal Assessment</th> <th rowspan="2">End Term Examination</th> </tr> <tr> <th>Class test</th> <th>Assignment</th> <th>Viva</th> <th>Attendance</th> </tr> </thead> <tbody> <tr> <td>Weightage (%)</td> <td>10</td> <td>10</td> <td>5</td> <td>5</td> <td>70</td> </tr> </tbody> </table>	Theory L/T (%)	Lab/Practical/Studio (%)	End Term Examination	100	-	70	Components (Drop down)	Continuous Assessment/Internal Assessment				End Term Examination	Class test	Assignment	Viva	Attendance	Weightage (%)	10	10	5	5	70	
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Text:

Textbook of Biotechnology, RC Dubey/ PK Gupta. S Chand & Co Ltd (December 1, 2007), **ISBN-10:** 8121926084

Environmental Biotechnology, Pradipta Kumar Mohapatra. I.K. International Publishing House; 1st Ed. edition (February 6, 2007). **ISBN-10:** 818823754X