



Course Outline Form

EVEN SEMESTER 2019

Dear Student: Course outlines are intended to provide students with an overall plan for a course to enable them to function efficiently and effectively in the course.

*Academic Programs
BSc Biotechnology
EMEA College
Kondotty*

Course Outline : BTY4C02

ENVIRONMENTALBIOTECHNOLOGY (2018-2019)

Name of the Stream	Science
Name of the Programme	BSc Biotechnology
Name of the Course	BTY4C02 ENVIRONMENTALBIOTECHNOLOGY
Nature of the Course	Complementary Course
Semester	Fourth
Lecturer(s)	Shilly Das.A
Name of the Coordinator	
Year	2018-2019
No of Credits	2
No of Contact Hours	2
Course Description	<ul style="list-style-type: none"> The course is an introduction to environmental biotechnology and focuses on the utilization of microbial processes in waste and biodegradation, and bio remediation. Topics included are relevant basic principles in bioremediation and scp,bioplastics.Use of biotechnology for environmental protection
Course Objectives	<p>Explains the microbial processes and growth requirements underlying the process of Bioenergy from waste: methane production, To help students understand the most commonly applied Use of biotechnology for environmental protection. To make awareness among students about the use of Biofertilizers and Biopesticides. Biotechnological application of thuringensis toxin as a natural pesticide.</p>
Course Outcome	Evaluate the potential for biotechnological applications in environmental protection
Assessment Method	<p>Assignments</p> <p>Class Tests</p> <p>Unit Tests</p> <p>Practical Tests</p> <p>Term Exam</p> <p>Seminars</p>
Teaching Methods Used	
Textbook	Jogdand, G.N and EBT : Basic Concepts and Application: Indushekar Thakur
References	<ol style="list-style-type: none"> Sylvia S. Mader. 2010. BIOLOGY, TENTH EDITION, McGraw-Hill Companies, Inc. T. Srinivas. 2008, New Age International (P) Ltd., Publishers Jogdand, G.N. 1995. EBT, Himalaya Publishing House EBT : Basic Concepts and Application: Indushekar Thakur (2006). I.K. International Publication. Pelczar, M.J. 1998. Microbiology: Concept & Applications, McGraw.
Internet Resources	

Internal Exam Pattern

Items	Marks/20	Marks/15
Assignment	4	3
Test Paper(s)/Viva voce	8	6
Seminar/Presentation	4	3

External Exam Pattern

Question Type	No of Question	Marks/Question	Total Marks
Short Questions(2-3 Sentences)	12	2	Ceiling 20
Paragraph / Problem Type	7	5	Ceiling 30
Essay Type	2 out of 4	10	10
Total			60
Time			2 hrs

Graduate Attributes	Name of the Course: BTY4C02 ENVIRONMENTALBIOTECHNOLOGY
	Knowledge
	Academic and Intellectual Skills
	Self Learning
	Collaborative Learning
	Professional Skills
	Communication Skills
	Decision Making
	Problem Solving Skills
	Research Skills
Entrepreneur Aptitude	
Personal Skills	
Creative Thinking	
Lifelong Learning	
Application Skills	
Attitude and Values	
Social Responsibility	
Ethical Commitment	
Global Citizen	

Course Schedule

Use of biotechnology for environmental protection.	Week 1
Biofertilizers and Biopesticides.	Week 2

Biotechnological application of thuringensis toxin as a natural pesticide.	Week 3
Principle and application of Bioremediation,	Week 4
Bioventing and Biosorption.	Week 5
Bioenergy from waste: methane production, biogas	Week 6
fuel-alcohol from biomass and lignocellulose residues.	Week 7
Production of biodiesel. Advantages and environmental effects of biofuels.	Week 8
Biopower- methods for electricity generation from biomass.	Week 9
Single cell protein- production and advantages.	Week 10
Biomass production from waste,	Week 11
Bioplastics- Biopols (PHB), Biolac (polylactic acid)	Week 12
Bio-derived polyethylene	Week 13
Genetically modified bioplastics	Week 14
. Environmental impacts of bioplastics.	Week 15
Principle and methods for the Bio leaching of gold	Week 16
Bioleaching of Copper and Uranium.	Week 17
Environmental Significance of genetically modified organisms- Effect on biodiversity.	

Contact Details

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