



University of Management & Technology
School of Science
Department of Life Science

BT-209 Introduction to Biotechnology

Lecture Schedule	Wednesday & Saturday 09:30 AM -10:45 AM	Semester	Fall 2019
Pre-requisite	---	Credit Hours	3
Instructor	Ms Nabiha Naeem	Contact Moodle link	nabiha.naeem@umt.edu.pk
Office	3S-37	Office Hours	See office window
Course Description	This course is designed to give students both a theoretical background and a working Knowledge of the instrumentation and techniques employed in a biotechnology laboratory. Emphasis will be placed on the introduction of foreign DNA into bacterial cells, as well as the analysis of nucleic acids (DNA and RNA) and proteins.		
Expected Outcomes	<p>This course will help the students to define and</p> <ul style="list-style-type: none"> • explain the scope, concepts, and terminology of biotechnology (Scientific Literacy); • investigate and explain current events and advances in biotechnology (Scientific Literacy); • perform techniques involving measurement; • perform techniques involving the manipulation of DNA 		
Textbook(s)	<ol style="list-style-type: none"> 1. Daugherty E, 2012. Biotechnology: Science for the New Millennium. 1st Edition, Revised; Paradigm Publication. 2. Smith JE, 2009. Biotechnology. 5th Edition; Cambridge University Press 		
Grading Policy	<ul style="list-style-type: none"> • Quizzes • Assignment • Midterm: • Final Exam: 	<p>15%</p> <p>20%</p> <p>25%</p> <p>40%</p>	

Course Schedule

Week	Lecture #	TOPICS
1	1 2	Introduction to Biotechnology Biotechnology- definition and history
2	1 2	foundations of biotechnology and interdisciplinary pursuit;
3	1 2	Branches and/or applications of biotechnology in medicine
4	1 2	Biotechnology in agriculture (food, livestock, fisheries, algae, fungi, etc.)
5	1 2	Protection of biotechnological products;
6	1 2	Safety in biotechnology
7	1 2	Public perception of biotechnology; biotechnology and ethics;
8	1 2	biotechnology and the developing world
9	1 2	Midterm Exam Review Paper
9	1 2	Fermentation Solid State fermentation and Submerged fermentation
10	1 2	Downstream processing
11	1 2	Recombinant methods Recombinant DNA Technology Transformation
12	1 2	Plant biotechnology Applications of agricultural biotechnology
13	1 2	Genetically Modified Organisms Examples of GMOs , Applications of GMOs in various industries
14	1 2	Introduction of microbes, Microbial Biotechnology Applications of microbial biotechnology in Agriculture, Medicine
15	1 2	Biotech/Pharmaceutical Bioprocessing