Republic of Iraq Fhe Ministry of Higher Education & Scientific Research



University:Al Muthana College:Science Department:Biology Stage:Fourth Lecturer name:Maitham abas makei Academic Status:.Assist. Prof. Qualification:Msc Place of work: Al Muthana University/ College of Science.

49

Teaching plan	for the sem	ester form 20)21-2022
----------------------	-------------	---------------	----------

Course Instructor	Maitham a	bas Makei					
E_mail	mabbas@mu.edu.iq						
Title	Industrial microbiology.						
Course	(15) week, two hours per week (theoretical part).						
Coordinator	(15) week, two hours per week (practical part).						
Course Objective	explain relationship between Microorganism and Industrial food						
Course Description	Production of Metabolites, Industrial enzymes, Amino acid, Organic acids, Antibiotics, Vitamins and Single Cell Proteins						
Textbook							
	 -Riegel ER and Bissinger HG (2003) Industrial fermentation: Principles processes and products; Vitamin B₁₂ (Cyanocobalamin). -Gupta R, Beg QK and Lorenz P (2002) Bacterial alkaline proteases: molecula approaches and industrial applications. Applied Microbiology and Biotechnology. 						
References	processes a -Gupta R, Beg (approaches	and products; Vita QK and Lorenz P s and industria	umin B ₁₂ (Cyanoc (2002) Bacterial	obalamin). alkaline proteas	es: molecula		
References	processes a -Gupta R, Beg (approaches	and products; Vita QK and Lorenz P s and industria	umin B ₁₂ (Cyanoc (2002) Bacterial	obalamin). alkaline proteas	es: molecular obiology and Final		
References Course Assessment	processes a -Gupta R, Beg approaches <i>Biotechnole</i>	and products; Vita QK and Lorenz P s and industria ogy.	amin B ₁₂ (Cyanoco 9 (2002) Bacterial al applications.	obalamin). alkaline proteas <i>Applied Micro</i>	es: molecular		

Republic of Iraq The Ministry of Higher Education & Scientific Research

-



University:AlMuthana College:Science Department:Biology Stage:Fourth Lecturer name:Maitham abas makei Academic Status:Assist.Prof. Qualification:Msc Place of work: AlMuthana University/ College of Science

week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1		BASICS OF INDUSTRIAL MICROBIOLOGY.		
2		BASICS OF INDUSTRIAL MICROBIOLOGY.		
3		TECHNIQUES IN INDUSTRIAL MICROBIOLOGY.		
4		COMPONENTS OF MEDIA FOR INDUSTRIAL INOCULUM DEVELOPMENT.		
5		COMPONENTS OF MEDIA FOR INDUSTRIAL INOCULUM DEVELOPMENT.		
6		FERMENTATION PROCESSES.		
7		FERMENTER DESIGN AND OPERATION.		
8		MAINTENANCE OF SELECTED CULTURES.		
9		MICROBIAL ENZYMES .		
10		AMYLASE		
11		PROTEASE		
12		CELLULASE		
13		PRODUCTION OF ANTIBIOTICS.		
14		PRODUCTIO OF VITAMINS .		
15		SINGLE CELL PROTEIN .		

Instructor Signature:

Dean Signature:Maitham A.Makei