Course Specifications

General Information

Course name	Biotechnology
Course number	BIOL4374
Faculty	
Department	
Course type	Major Needs
Course level	4
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - This course covers how microbes are used to manufacture components of food and consumer products, biologics and biomaterials using recombinant DNA and is organized following the steps in discovery and development of biological products .

Intended Learning Outcomes

Knowledge and Understanding	* To study the microbes in nature
Professional Skills	* Isolate, enumerate and control of microorganisms
General Skill	* team work

Course Contents

1 - Course introduction, scope, and concepts
2 - understanding and exploiting microbial diversity
3 - Microbial growth kinetics
4 - Pathways of microbial biotech product development
5 - Protein expression and secretion
6 - Antibiotics production
7 - Industrial enzymes
8 - Medically related products
9 - Metal leaching and biomining
10 - Emerging Infectious Diseases
11 - Bioterrorism/bioweapons
12 - Risk management solutions to indoor biological contamination
13 - Microbial remediation

Teaching and Learning Methods

1 - lectures, seminars and discussions

Students Assessment

Assessment Method	TIME	MARKS
First hour exam	60minutes	20
Second hour exam	60minutes	20
Attendence		10
Final exam	120minutes	50

Books and References

Recommended books	Microbial Biotechnology, Second Edition, 2007. Alexander N. Glazer, Hiroshi
	Manual of Industrial Microbiology and Biotechnology. ASM Press Washington, D.C. second edition
	Basic Biotechnology, Third Edition 2006. Colin Ratledge