



Course Specifications

Course Title:	Selected Topics of Biotechnology 2
Course Code:	20534208-3
Program:	Biotechnology
Department:	Biotechnology
College:	Science
Institution:	Taif University

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A. Course Identification

1. Credit hours: 3 (2 Lecture, 1 Lab)
2. Course type
a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/>
b. Required <input type="checkbox"/> Elective <input checked="" type="checkbox"/>
3. Level/year at which this course is offered: 12 th Level/4 th Year
4. Pre-requisites for this course (if any): None
5. Co-requisites for this course (if any): None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	60	100%
2	Blended		
3	E-learning		
4	Distance learning		
5	Other		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	30
2	Laboratory/Studio	30
3	Tutorial	0
4	Others (specify)	0
	Total	60

B. Course Objectives and Learning Outcomes

1. Course Description

The topics of this course will be determined by the Department council to cover some essential topics and new discoveries of basic sciences related to biotechnology.

2. Course Main Objective

The main purpose for this course is defining the recent applications of animal biotechnology describe the recent applications of Medical biotechnology, Microbial biotechnology, and pharmaceutical biotechnology.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge and Understanding	
1.1	Recognize the recent applications in plant, animal, microbial, medical and pharmaceutical biotechnology.	K1
1.2	List the advances in biotechnology applications	K5
2	Skills :	
2.1	Evaluate the potential risk of biotechnology applications	S2

CLOs		Aligned PLOs
3	Values:	
3.1	Present the values of working in a team	V1, V2

C. Course Content

No	List of Topics	Contact Hours
1	Introduction	3
2	Recent applications of Plant biotechnology	6
3	Recent applications of Animal biotechnology	6
4	Recent applications of Medical biotechnology.	6
5	Recent applications of Microbial biotechnology	6
6	Recent applications of pharmaceutical biotechnology	3
Total		30

List of practical topics	Contact Hours
Methods of studying DNA and RNA isolation	3
Applications of Plant biotechnology	6
Applications of Animal biotechnology	6
Applications of Medical biotechnology.	6
Applications of Microbial biotechnology	6
Applications of pharmaceutical biotechnology	3
Total	30

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge and Understanding		
1.1	Recognize the recent applications in plant, animal, microbial, medical and pharmaceutical biotechnology.	Lecture	Written exams
1.2	List the advances in biotechnology applications	lecture	Written exams
2.0	Skills		
2.1	Evaluate the potential risk of biotechnology applications	Project	Written exams
3.0	Values		
3.1	Accept the values of working in a team	Discussion	report

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Midterm exam	5	20%

#	Assessment task*	Week Due	Percentage of Total Assessment Score
2	periodical exam	8	10%
3	Oral presentation, group project	continue	10%
4	Practical Exam	10	20%
5	Final exam	11	40%

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:

Six hours per week of office hours are available for each faculty members for consultations and academic advice.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	1. Abdin, M.Z., Kiran, U., Kamaluddin, M., Ali, A. Plant Biotechnology: Principles and Applications, 2017
Essential References Materials	1. Molecular Biology of the Cell, 4th edition, Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, and Peter Walter, New York: Garland Science ; 2002. ISBN-10: 0-8153-3218-1 ISBN-10: 0-8153-4072-9 2. NdukaOkafor. Modern Industrial Microbiology and Biotechnology. Science Publishers An imprint of Edenbridge Ltd., British Isles. 2007; ISBN 978-1-57808-434-0.
Electronic Materials	Cell Biology websites that contain various electronic materials, photos, pathways for biotechnological applications https://www.ncbi.nlm.nih.gov
Other Learning Materials	Online videos of cellular process, divisions, movement, communications

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	One classroom for 2 hours a week and one laboratory for 3 hours a week with internet facility.
Technology Resources (AV, data show, Smart Board, software, etc.)	Laptop and data show
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Laboratory for 3 hours per week 2. Microscopes, Centrifuge 3. Cyclers. Tubes, chemicals.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Course management and planning	Students	Indirect
Effectiveness of teaching and assessment	Students	Indirect
Quality of learning resources	Students	Indirect
Effectiveness of Evaluation and exams	Students, Peer Reviewer	Indirect, Direct

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	Department Council
Reference No.	7
Date	16-6-1443