2023
TP-153

Course Specification
(Bachelor)

Course Title:	**Graduation Project**
Course Code:	**2054204-3**
Program:	**Bachelor in Biotechnology**
Department:	**Biotechnology Department**
College:	**College of Science**
Institution:	**Taif University**
Version:	**V4**
Last Revision Date:	**3/1445 – 9/2023**

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours:					
3 (2 Lecture, 1 Lab)					
2. Course type					
A.	☐ University	☐ College	☒ Department	☐ Track	☐ Others
B.	☒ Required		☐ Elective		
3. Level/year at which this course is offered: 8th level/4th year					
4. Course general Description:					
The course will introduce students to conducting a small research project and to implement research concepts in their minds. It includes training to design experiments, prepare solutions, collect and prepare samples, obtain and organize data, discuss and interpret results, and present the obtained results. The course also will introduce students to the concepts of reading and writing scientific articles.					
5. Pre-requirements for this course (if any)**:**					
None					
6. Co-requirements for this course (if any)**:**					
None					
7. Course Main Objective(s):					
The main objective of this course is to train students on searching for a research topic, design experiment, conduct experiment, collect data, organize and analyze data, and present the obtained data.					

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	**45**	**100**
2	E-learning		
3	Hybrid • Traditional classroom • E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	30
2.	**Laboratory/Studio**	15
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		**45**

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Recognize the basics of scientific research principles	K2	Lecture	Report
1.2	Describe experiment design, data analysis, and data presentation	K5	Lecture, Project	Lab Report
2.0	**Skills**			
2.1	Excise molecular data analysis and interpretation	S3	Project	Performance Evaluation
2.2	Practice problem solving	S4	Problem solving	Performance Evaluation
3.0	**Values, autonomy, and responsibility**			
3.1	Initiate independence and responsibility	V4	Project	Oral examination

C. Course Content

No	List of Topics	Contact Hours
1.	Introduction, scientific method, objective, theoretical framework	2
2.	Reading review: How to read and search for research proposal topics.	2
3.	Experimental design skills	4

4.	Data collection and organization skills	6
5.	Data analysis skills	2
6.	Writing introduction, research gap, research objective, Materials and Methods, Results, Discussion, References, Abstract	6
7.	Data presentation skills	4
8.	Final presentation of the project	4
Total		30

D. Students Assessment Activities

1. For practical project

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Report writing	Continuous	30%
2.	Performance Evaluation	Continuous	30%
3.	Final project Report	Continuous	30%
4.	Oral examination (Presentation)	16	10%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

2. For review project

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
4.	Writing (Abstract, Introduction, Materials & Methods, Results & Discussion, Conclusion, References)	Continuous	50%
5.	Discussion	Continuous	30%
6.	scientific paper	Continuous	10%
4.	Presentation	15	10%

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	----------
Supportive References	Lecture Series Prepared by Department of Biotechnology
Electronic Materials	Reading articles in the field of the graduation project at https://pubmed.ncbi.nlm.nih.gov/

Other Learning Materials	----------

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	One classroom (60 seats) with internet connection for 2 hours a week and one laboratory for 3 hours a week with internet facility.
Technology equipment (projector, smart board, software)	Data show, internet connection.
Other equipment (depending on the nature of the specialty)	Chemicals, lab instruments, glass ware that depend on the type of research proposals.

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Peer Review, Students	Direct (Independent Reviewer), Indirect (survey)
Effectiveness of Students assessment	Faculty members	Direct (Random Correction)
Quality of learning resources	Students	Indirect (survey)
The extent to which CLOs have been achieved	Faculty members	Direct
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Department council
REFERENCE NO.	6
DATE	10/11/2023

قسم التقنية الحيوية بكلية العلوم
Biotechnology Department
TU
جامعة الطائف
TAIF UNIVERSITY