



Course Specifications

Course Title:	Graduation Project
Course Code:	2014203-3
Program:	Bachelor in Microbiology
Department:	Biology Department
College:	College of Sciences
Institution:	Taif University

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A. Course Identification

1. Credit hours: 3 hr
2. Course type a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/> b. Required <input checked="" type="checkbox"/> Elective <input 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	6 hr/Week	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	-
4	Others (specify)	-
	Total	60

B. Course Objectives and Learning Outcomes

1. Course Description: This course deals with studying methods and steps of scientific research, methods used in scientific thinking, problem solving and data analysis as well as preparation and discussion of scientific essays.
2. Course Main Objective: By the end of this course, the student can explain the importance of research for country development, formulate information related to data analysis, critical thinking and problem solving, identify methods used in scientific writing also can understand ethics and rules of scientific research.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	Knowledge and Understanding:	
1.1	Identify different basics and routine procedures of scientific tools and equipment used in the study topic.	K3

CLOs		Aligned PLOs
1.2		
2	Skills:	
2.1	Investigate biological and scientific problems to recommend proper solutions.	S2
2.2	Illustrate functions of various macromolecules.	S4
3	Values:	
3.1	Demonstrate commitment to professional and academic standards.	V1
3.2	Develop plans for academic and/or professional self-development.	V2
3.3	Assess presentation performance to discuss advanced scientific topics.	V3

C. Course Content

No	List of Topics	Contact Hours
1	Definition of the research problem and plan	3L+3P
2	Preparation and discussion of the proposal	3L+3P
3	Design of experiments/field study plan with time schedule	3L+3P
4	Preparation of literature review	3L+3P
5	Execution of experiments/ field studies collecting results	3L+3P
6	Data Analysis	3L+3P
7	Design poster to describe in brief the research	6L+6P
8	Reviewing thesis elements	3L+3P
9	Writing thesis in final form	3L+3P
Total		30L+30P

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	Identify different basics and routine procedures of scientific tools and equipment used in the study topic.	Open discussion Cooperative learning	Activities Evaluation Final evaluation of thesis
2.0	Skills:		
2.1	Investigate biological and scientific problems to recommend proper solutions.	Brain storming Problem solving	Assignments
2.2	Illustrate functions of various macromolecules.	Brain storming Problem solving	Assignments
3.0	Values:		
3.1	Demonstrate commitment to professional and academic standards.	Project	Final evaluation of thesis
3.2	Develop plans for academic and/or professional self-development.	Discovery learning Problem solving	Assignments
3.3	Assess presentation performance to discuss advanced scientific topics.	Project	Final evaluation of thesis

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Oral discussion	11 th	30
2	Thesis and presentation	11 th	70

*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:

6 hours per week (as defined in the teaching schedule of the faculty member) for academic advice and consultations.

Teaching staff is also available using Blackboard web site and Taif University “Edugate” System.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	<ul style="list-style-type: none"> - J. Faye (2014). The Nature of Scientific Thinking: On Interpretation, Explanation and Understanding. Palgrave Macmillan Publications. - Hans F. Ebel, Claus Bliefert, William E. Russey (2004). The Art of Scientific Writing, 2nd Edition, Wiley-VCH Publications.
Essential References Materials	<ul style="list-style-type: none"> - Robert M. Martin (1997). Scientific Thinking, 1st Edition. Broadview Press. - Joshua Schimel (2011). Writing Science, 1st Edition, Oxford University Press.
Electronic Materials	Blackboard website Website of Saudi digital Library
Other Learning Materials	Computer-based programs and professional software

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms and laboratories
Technology Resources (AV, data show, Smart Board, software, etc.)	Laptop- data show
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Camera and other resources related to the research

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Students	Indirect

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Quality of learning resources	Peer Reviewer Students	Direct Indirect
Extent of achieving the course learning outcomes	Peer Reviewer Students	Direct Indirect

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	Biology Department
Reference No.	Committee number 14 - Academic Year 1442-1443H
Date	22\5\2022G – 21\10\1443H

كلية العلوم
قسم الأحياء
College of Science
Department of Biology



عمادة كلية العلوم
Deanship of Science College
جامعة الطائف
TAIF UNIVERSITY