هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

2023
TP-153

Course Specification
(Bachelor)

Course Title:	Graduation Project II
Course Code:	ICHM494-3
Program:	Bachelor of Science in Industrial Chemistry
Department:	Department of Physical Sciences
College:	College of Science
Institution:	Jazan University
Version:	TP-153 (2024)
Last Revision Date:	31 January 2024

Table of Contents

A. General information about the course:

1. Course Identification

1. Credit hours: 3hrs)

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:

Course title	Course code	Contact Hours			Credit Hours	Year	Level	Prerequisite	Corequisite
		Lec	Tut	Lab					
Graduation Project II	ICHM 494-3	1	-	4	3	4th	8th	ICHEM493-3	-----

In this course, the student works on a research project in one of the fields of chemistry independently under the supervision of a staff member. He implements the research plan he completed in the previous course, submits a report on the research, presents it, and then discusses it.

5. Pre-requirements for this course (if any)**:**

Department Approval

6. Co-requisites for this course (if any)**:**

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7. Course Main Objective(s):

1. **Training the student on the skills of implementing scientific research.**
2. **Training the student to interpret the results of scientific research and discuss them in light of previous publications.**
3. **Training the student on scientific writing of the research report.**
4. **Training the student to present and discuss his research.**

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	75.	100%
2	E-learning		
3	Hybrid		

No	Mode of Instruction	Contact Hours	Percentage
	• Traditional classroom • E-learning		
4	Distance learning		

3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	15
2.	**Laboratory/Studio**	60
3.	**Field**	
4.	**Tutorial**	
5.	**Others (specify)**	
Total		75

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;** *Upon completion of the course, students are able to:*			
1.1	***Identify the key theories, concepts, and vocabulary of the selected topics. (M)***	**K 1**	***Lect Discussion***	***Exams final report***
1.2	***Describe and explain the procedures, instruments, and techniques used in his research (M)***	**K 2**	***Lect Discussion***	***Exams final report***
2.0	**Skills;** *Upon completion of the course, students are able to:*			
2.1	***Demonstrate the ability to think critically, numerically, statistically, and logically, and use graphs and charts to solve problems (in the research topic) (M)***	**S 1**	***Lect Discussion Web-based activities***	***Exams***
2.2	***Apply his experimental basics and skills to use laboratory equipment, modern instrumentation, and classical techniques related to their research topic. (M)***	**S2**	***Lect Discussion Lab work***	***final report***
2.3	***Use a variety of instruments to efficiently***	***S3***	***Lect***	***final report***

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	analyze different materials (M)		*Discussion Lab work*	
2.4	*Examine his material and lab safety background to Follow proper procedures and regulations for the safe handling and use of chemicals. (M)*	S4	*Lect Discussion Lab work*	*Exams*
2.5	*Use communication and online technology to prepare a report/poster on a selected chemistry research topic (M)*	S 5	*Lect Discussion Web-based activities*	*Exams final report*
3.0	**Values, autonomy, and responsibility;** *Upon completion of the course, students are able to:*			
3.1	*Work in groups and teams collaboratively with others. (M)*	*V1*	*Lect Discussion Lab work*	*Exams*
3.2	*Act with integrity and good ethics in the chemistry profession and their obligation to society (M)*	V 2	*Lect Discussion*	*Exams final report*

C. Course Content

No	List of Topics	Contact Hours
1.	Sources of scientific and chemical knowledge	9
2.	Choosing a research topic.	9
3.	Skills of searching information sources and writing a literature review.	9
4.	Skills of preparing a research plan.	9
5.	skills of preparing and giving lectures and seminars.	9
	Total	$45h.$

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	*Periodic Exams*	*6-8*	*15%*
2.	*Assignments & Classroom activities*	*During semester*	*5%*

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
3.	*Lab work*	*During semester*	*30%*
4.	*Final Exam*	*16-17*	*50%*
		Total	100%

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

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	*To be determined by the supervisor from the available source*
Supportive References	*To be determined by the supervisor from available sources*
Electronic Materials	• *The Purpose and Value of Scientific Research, https://study.com/academy/lesson/what-is-scientific-research.html* *Types of Scientific Research, https://innspub.net › types-of-scientific-research* *What is Scientific Research and How Can it be Done, https://www.academia.edu/40888930/What_is_Scientific_Research_and How_Can_it_be_Done*
Other Learning Materials	*Platform connecting researchers with protocols and methods. Springer Nature Experiments*

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	*1 Lecture room.*
Technology equipment (projector, smart board, software)	*Smartboard, Data show, Blackboard, internet*
Other equipment (depending on the nature of the speciality)	*Saudi Digital Library*

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Student	Likert-type Survey CES) Indirect
Effectiveness of Students' assessment	Instructor & Course Coordinator	Classroom evaluation (direct & indirect
Quality of learning resources	Program Coordinator	Indirect

Assessment Areas/Issues	Assessor	Assessment Methods
The extent to which CLOs have been achieved	Assessment committee	Indirect
Other		

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

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Physical Sciences Department Council
REFERENCE NO.	Meeting (3)
DATE	12/03/2024 -02/09/1445