هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	Graduation Project
Course Code:	**491CHEM2**
Program:	**Bachelor in Chemistry**
Department:	**Chemistry**
College:	**Chemistry of Science**
Institution:	**Jazan University (JU)**

Table of Contents

A. Course Identification

1. Credit hours	**2h**
2. Course type	
a.	University ☐ College ☐ Department ☑ Others ☐
b.	Required ☑ Elective ☐
3. Level/year at which this course is offered	
4. Pre-requisites for this course (if any):	***Department Approval***
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 & LAB**	***11 (Class)*** ***22 (lab)***	***100%***
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	***11***
2	**Laboratory/Studio**	***22***
3	**Tutorial**	
4	**Others** (specify)	
	Total	***33***

B. Course Objectives and Learning Outcomes

Course Title	Course Number	Contact Hours		Credit Units	Year	Level	Pre-requisite	Co-request
		Lec.	Prac.					
Graduation project	***491CHEM2***	***1***	***2***	***2***	***Four Year***	***11th l***	***Department Approval.***	***none***

1. Course Description

The course of Graduation Project aims to give the students the opportunities to Choose, Conduct Literature Survey Conduct Survey of Materials and Methods, Conduct Laboratory and/or Field Work, Collect Experimental and/or Field Data, Express Experimental and/or Field Data, Write Scientific Paper, Write Results, Discuss Results and Present Thesis for Graduation Research Project and Viva.

2. Course Objective

The course of Graduation Project aims to give the students the opportunities to:
Conduct, Express and Discuss Laboratory and/or Field Work.
Discuss Results and Write Scientific Paper.

Present Thesis for Graduation Research Project and Viva.

3. Course Main Objective

The course aims to expand the student's knowledge of chemistry research in a research specialization chosen by the student. This will include understanding the process through which research is planned, carried out and reported. There is also significant interaction with the research group of the supervisor chosen for the project.

4. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding** *Up on completion of this course student will be able to*	
1.1	***Demonstrate a broad understanding and critical view of key theories, concepts, and terms in the field of research. (M)***	***K1***
1.2	***Describe correctly Chemical phenomena using chemical principles and scientific reasoning (M)***	***K2***
2	**Skills :** *Up on completion of this course student will be able to*	
2.1	***Demonstrate the ability to think critically, numerical, and statistical, and logical analysis, and to use graphs and diagrams to solve problems (in the research topic) (M)***	***S1***
2.2	***Apply their experimental basics and skills to know laboratory equipment, modern instrumentation, and classical techniques used related to his research topic. (M)***	***S2***
2.3	***Examine his material and lab safety background to Follow proper procedures and regulations for safe handling and use of chemicals. (M)***	***S3***
2.4	***make effective use of communication, and online technology about chemistry topics in order to improve their basic knowledge in writing (report and paper/ poster) with a good verbal and clear scientific language. (M)***	***S4***
3	**Values:** *Up on completion of this course student will be able to*	
3.1	***Act with integrity and good ethics in chemistry profession and their obligation to society. (M)***	***V2***

C. Course Content

No	List of Topics	Contact Hours
1	***Choosing a Research Project.***	***2***
2	***Literature Survey.***	***1***
3	***Materials and Methods Survey***	***1***
4	***Laboratory and/or Field Work.***	***1***
5	***Data Acquisition and Expression.***	***2***
6	***Writing Scientific Papers.***	***2***
7	***Writing Results and Discussion and Thesis Preparation.***	***2***
8	***Perform the required tests and experiments with respect to supervisor advice***	***22***
Total		33

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** *Up on completion of this course student will be able to*		
1.1	***Demonstrate a broad understanding and critical view of key theories, concepts, and terms in the field of research. (M)***	• ***lecture*** • ***Seminars*** • ***individual presentation*** • ***case studies***	• ***Oral discussion***
1.2	***Describe correctly Chemical phenomena using chemical principles and scientific reasoning (M)***	• ***lecture*** • ***Seminars*** • ***individual presentation*** ***case studies***	• ***Oral discussion***
2.0	**Skills** *Up on completion of this course student will be able to*		
2.1	***Demonstrate the ability to think critically, numerical, and statistical, and logical analysis, and to use graphs and diagrams to solve problems (in the research topic) (M)***	• ***lecture*** • ***Seminars*** • ***individual presentation*** ***case studies***	• ***Oral discussion***
2.2	***Apply their experimental basics and skills to know laboratory equipment, modern instrumentation, and classical techniques used related to his research topic. (M)***	• ***lecture*** • ***Seminars*** • ***individual presentation*** ***case studies***	***Oral discussion***
2.3	***Examine his material and lab safety background to Follow proper procedures and regulations for safe handling and use of chemicals. (M)***	• ***lecture*** • ***Seminars*** • ***individual presentation*** ***case studies***	***MCQ***
2.4	***make effective use of communication, and online technology about chemistry topics in order to improve their basic knowledge in writing (report and paper/ poster) with a good verbal and clear scientific language. (M)***	• ***lecture*** • ***Seminars*** • ***individual presentation*** ***case studies***	***Oral discussion***
3.0	***Values*** ***Up on completion of this course student will be able to***		
3.2	***Act with integrity and good ethics in chemistry profession and their obligation to society***	• ***lecture*** • ***Seminars*** • ***individual presentation*** ***case studies***	***Plagiarism Detection***

2. Assessment Tasks for Students

#	Assessment task*		Week Due	Percentage of Total Assessment Score
1	***Demonstrate a broad understanding of key theories, concepts, and terms in the field of research.***	***Oral discussion & Viva discussion***	***2-10***	***5***
2	***Describe chemical phenomena correctly using chemical principles and scientific reasoning.***	***Oral discussion & Viva discussion***	***2-10***	***5***

#	Assessment task*		Week Due	Percentage of Total Assessment Score
3	*Demonstrate the ability to think critically, numerically, statistically, logically, and use graphs and charts to solve problems (in the research topic)*	*Oral discussion & Viva discussion*	*2-10*	*30*
4	*Apply their experimental basics and skills to know laboratory equipment, modern instrumentation, and classical techniques used related to his research topic.*	*Oral discussion & Viva discussion*	*2-10*	*15*
5	*Examine his material and lab safety background to Follow proper procedures and regulations for safe handling and use of chemicals.*	*QUIZ in Safety)*	*2-10*	*10*
6	*make effective use of communication, and online technology about chemistry topics in order to improve their basic knowledge in writing (report and paper/ poster) with a good verbal and clear scientific language.*	*Oral discussion & Viva discussion*	*2-10*	*20*
7	*Student response to supervisor's instructions during project preparation while adhering to ethical standards.*	*Oral discussion & Viva discussion*	*2-10*	*20*
8	*The student's commitment to the ethical standards of writing during the preparation of the research*	Plagiarism Detection	*2-10*	*15*

***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 :

- *Instructor will be available for academic counseling on daily basis for at 4h/day during office hours.*
- *The office hours are listed in the instructor time table and delivered to students in the first lecturer in each semester.*
- *Instructor is available in a WhatsApp group with student.*
- *E-mail and Telephone number are delivered to student for any help during semesters.*

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	*To be determined by supervisor from available sources.*
Essential References Materials	*To be determined by supervisor from available sources*
Electronic Materials	*To be determined by supervisor from available sources*
Other Learning Materials	*To be determined by supervisor from available sources*

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	***1 Lecture room.***
Technology Resources (AV, data show, Smart Board, software, etc.)	***Smart board, Data show, Black board, internet***
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	***Saudi Digital Library***

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of Teaching and Assessment	***Student***	***Likert-type Survey (CES) Indirect***
Extent of achievement of course learning outcomes	***Instructor & Course coordinator***	***Class room evaluation (direct & indirect) + final Department Viva***
Quality of learning resources	***Program coordinator***	***Indirect***
Exam Quality assessment	***Assessment committee***	***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	*Chemistry Department Council CHEMS 2216*
Reference No.	*CHEMS 221602*
Date	*27/09/2022 G -- 01/03/1444 H*

Attachments:

1. LAB Content

To be determined by the supervisor depending on the title of project and availability in the department …..etc.

2. Blue print

Course Name	Graduation Project
Course Code	**CHEM 491**

PLOs	K1	K2	S1	S2	S3	S4	V1	V2
CLOs	1.1	1.2	2.1	2.2	2.3	2.4	3.1	3.2
Marks	5	5	30	15	10	20	-	15

Learning Domain	PLOs	CLOs	Assessment Type	Assessment Tool	No of Questions	Marks of the Assessment	Weight of the Assessment
Knowledge & understanding	K1	1.1 (5M)	Theoretical discussion	Oral discussion		5	5
	K2	1.2 (5M)	Theoretical discussion	Oral discussion		5	5
Skills	S1	2.1 (30M)	Theoretical discussion	Oral discussion		10	10
			Viva discussion	Oral discussion		20	20
	S2	2.2 (15M)	Practical evaluation	Oral discussion		15	15
	S3	2.3 (10M)	Safety Quiz	MCQ		10	10
	S4	2.4 (20M)	Thesis discussion	Oral discussion		20	20
Values, Autonomy and Responsibility	V2	3.2 (15M)	Ethics of scientific research	Plagiarism Detection (Viva evaluation)		10	10
				Plagiarism Detection		5	5
TOTAL							100

3- Assessment Cards

Kingdom of Saudi Arabia
Ministry of Education
Jazan University
Faculty of Science
Chemistry Department

المملكة العربية السعودية
وزارة التعليم
جامعة جازان
كلية العلوم
قسم الكيمياء

استمارة تقييم المشرف لمشروع البحث (مقرر491 كيم)

(الفصل الدراسي – العام الجامعي H)

اسم الطالب : ..... الرقم الجامعي : .....

عنوان البحث باللغة العربية :

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عنوان البحث باللغة الإنجليزية:

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م	عناصر التقييم	الدرجة النهائية	درجة الطالب	الدرجة كتابة	ملاحظات
1.1	إظهار فهم واسع للنظريات والمفاهيم والمصطلحات الرئيسية في مجال البحث.	2.5			
1.2	وصف الظواهر الكيميائية بشكل صحيح باستخدام المبادئ الكيميائية والتفكير العلمي.	2.5			
2.1	إظهار القدرة على التفكير النقدي و العددي و الإحصائي والتحليل المنطقي واستخدام الرسوم البيانية والمخططات لحل المشكلات (في موضوع البحث)	10			
2.2	استجابة الطالب لتعليمات المشرف أثناء إعداد الجزء العملي	15			
2.3	إلمام الطالب بوسائل الأمن و السلامة و التعامل مع الكيماويات بصورة سليمة	10			Quiz in Safety
2.4	قدرة الطالب علي استخدام وسائل التواصل و الإنترنت لكتابة المحتوى العلمي للبحث وفقاً للمعايير العلمية (الملخص – المقدمة -..... المراجع).	5			
3.2	التزام الطالب بالمعايير الأخلاقية الخاصة بالكتابة أثناء إعداد البحث	5			
	المجموع	50			

المشرف على البحث **يعتمد،،،**

الاسم: رئيس قسم الكيمياء

التوقيع :

التاريخ: **د. وليد بن محمد يحيي الامير**

استمارة تقييم لجنة الاختبار لمشروع البحث (مقرر 491كيم)

(الفصل الدراسي – العام الجامعي H)

اسم الطالب : ..... الرقم الجامعي : ..... مسلسل رقم .....

عنوان البحث باللغة العربية :

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عنوان البحث باللغة الإنجليزية:

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م	عناصر التقييم	الدرجة النهائية	درجة الطالب	الدرجة كتابة	ملاحظات
1.1	إظهار فهم واسع للنظريات والمفاهيم والمصطلحات الرئيسية في مجال البحث.	2.5			
1.2	وصف الظواهر الكيميائية بشكل صحيح باستخدام المبادئ الكيميائية والتفكير العلمي.	2.5			
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2.4	قدرة الطالب علي استخدام وسائل التواصل و الإنترنت لكتابة المحتوى العلمي للبحث وفقاً للمعايير العلمية (الملخص – المقدمة - ..... المراجع).	15			
3.2	التزام الطالب بالمعايير الأخلاقية الخاصة بالكتابة أثناء إعداد البحث	10			
	المجموع	50			

أعضاء لجنة الاختبار	
الاسم	**التوقيع**

يعتمد،،،

رئيس قسم الكيمياء

د. وليد بن محمد يحي الامير