Course Specification

(Postgraduate Programs)

Course Title: Research Project	
Course Code: BIO 6299	
Program: Executive Master of Forensic Science	
Department: Biology and Chemistry	
College: Science	
Institution: Imam Mohammad Ibn Saud Islamic University	
Version: 1	
Last Revision Date: 29 September 2024	

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A. General information about the course:

1. Course Identification:

1. Credit hours: 4

2. Course type

A.	☐University	☐College	☒ Program	☐Track	
B.	☒ Required			☐Elective	

3. Level/year at which this course is offered: (Level 4 l Year 2)

4. Course General Description:

The capstone Research Project in Forensic Science is the culminating course for students in the Executive Master of Forensic Science program. This course provides an opportunity to apply Forensic Science methods to tackle real-world problems. Students will select a relevant research topic, conduct a literature review, and develop Forensic Science models. They will work closely with faculty advisors to refine their research methodologies and address ethical considerations in data collection and in final written reports. The course concludes with a comprehensive written report and an oral presentation, showcasing students' ability to effectively communicate their findings. This capstone experience prepares students for advanced academic pursuits and equips them with essential skills for careers in Forensic Science and related fields.

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

BIO 6291

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

None

7. Course Main Objective(s):

The main objective is to enable students to apply their Forensic Science knowledge and tools to solve real-world problems using Forensic Science methods. The project aims to enhance critical thinking, research skills, and effective communication, preparing students for professional careers or further academic study.

2. Teaching Mode: (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	-	-
2	E-learning	-	-

No	Mode of Instruction	Contact Hours	Percentage
3	Hybrid • Traditional classroom • E-learning	-	-
4	Distance learning	-	-
5	Others (specify): Research Activities	60	100%

3. Contact Hours: (based on the academic semester)

No	Activity	Contact Hours
1.	**Lectures**	-
2.	**Laboratory/Studio**	-
3.	**Field**	-
4.	**Tutorial**	-
5.	**Others (specify): Research Activities**	60
	Total	60

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

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
1.0	**Knowledge and understanding**			
1.1	Recall advanced application of in-depth and up-to-date technical knowledge and research principles in forensic science	K1, K3	Interactive Lecture Discussion and Dialogue Mind Maps Concept Maps Standard Method Inductive Method Self-Learning Cooperative Learning Field Visits	Written tests Class discussion questions Class assignments Homework Short research/reports Summaries Presentations
1.2	Describe appropriately judged professional solutions to forensic	K3, K4	Interactive Lecture Discussion and Dialogue Mind Maps	Written tests Class discussion questions

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
	science problems		Concept Maps Standard Method Inductive Method Self-Learning Cooperative Learning Field Visits	Class assignments Homework Short research/reports Summaries Presentations
1.3	Describe a required understanding of the basic concepts about forensic science in relevant topics and fields	K3, K4	Interactive Lecture Discussion and Dialogue Mind Maps Concept Maps Standard Method Inductive Method Self-Learning Cooperative Learning Field Visits	Written tests Class discussion questions Class assignments Homework Short research/reports Summaries Presentations
1.4	List the essential processes and procedures for the investigation in forensic science and present it inclusively	K1, K3	Interactive Lecture Discussion and Dialogue Mind Maps Concept Maps Standard Method Inductive Method Self-Learning Cooperative Learning Field Visits	Written tests Class discussion questions Class assignments Homework Short research/reports Summaries Presentations
2.0	**Skills**			
2.1	Analyze criminal samples and evidence to make decisions based on the knowledge gain	S1, S2, S4	Practical Application Microteaching Modeling and Simulation Project-Based Learning Discovery Learning Collaborative	Observation / Rating Scales Practical Tests Self-Assessment Peer Assessment

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
			Learning	
2.2	Compare the professional instruments, highly sensitive equipment, hazardous and non-hazardous materials with full capability to analyze Forensic Science Samples and cases, and problems	S1, S3	Practical Application Microteaching Modeling and Simulation Project-Based Learning Discovery Learning Collaborative Learning	Observation / Rating Scales Practical Tests Self-Assessment Peer Assessment
2.3	Summarize and analyze existing academic literature serving the forensic science arguments	S2, S4	Practical Application Microteaching Modeling and Simulation Project-Based Learning Discovery Learning Collaborative Learning	Observation / Rating Scales Practical Tests Self-Assessment Peer Assessment
2.4	justify laboratory instruments and perform biological and chemical experiments and analysis, handle chemicals and operate tools	S4	Practical Application Microteaching Modeling and Simulation Project-Based Learning Discovery Learning Collaborative Learning	Observation / Rating Scales Practical Tests Self-Assessment Peer Assessment
3.0	**Values, autonomy, and responsibility**			
3.1	Demonstrate ability to deal with various sources of knowledge and the ability to exploit and to estimate the time	V1	Modeling Dialogue and discussion Self-learning Collaborative learning	Observation Self-assessment Peer assessment Achievement file
3.2	Analyze the results with other colleagues and with	S4, V1, V2	Modeling Dialogue and discussion	Observation Self-assessment

Code	Course Learning Outcomes	Code of PLOs aligned with the program	Teaching Strategies	Assessment Methods
	supervisors		Self-learning Collaborative learning	Peer assessment Achievement file

C. Course Content:

No	List of Topics	Contact Hours
1.	Plan and execute a 15-week project in experimental or theoretical forensic science (or a mixture of both) and might involve substantial computing, construction and design, theory, measurements, and numerical modeling or analysis.	6
2.	Project topic selection and accompanying justification.	6
3.	Proposed project outline.	6
4.	Project schedule, individual or as a team member, task identification	6
5.	Setting and meeting deadlines and dealing with changes to the project plan as they arise.	6
6.	Weekly reports.	6
7.	Regular interaction and discussion with student's project supervisor, regarding experimentations and the results.	6
8.	Undertake a literature review on a topic of relevance to the overall project.	6
9.	Research project thesis, including literature review, materials, methods, results with appropriate tables, figures, curves, and discussion, conclusion, as well as references.	6
10	Oral presentation of student's project work, summarizing the essential scientific and practical aspects and outcomes of the project at the end of semester.	6
Total		**60**

D. Students Assessment Activities:

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	1st report by the supervisor	4th week	20%
2.	2nd report by the supervisor	8th week	20%
3.	3rd report by the supervisor	12th week	20%

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
4.	Final report by the examination committee	16th week	40%

*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	These are detected depending on the nature of the specialty of the research project
Supportive References	These are detected depending on the nature of the specialty of the research project
Electronic Materials	These are detected depending on the nature of the specialty of the research project
Other Learning Materials	These are detected depending on the nature of the specialty of the research project

2. Educational and Research Facilities and Equipment Required:

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Laboratories
Technology equipment (Projector, smart board, software)	Software
Other equipment (Depending on the nature of the specialty)	These are detected depending on the nature of the specialty of the research project

F. Assessment of Course Quality:

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Direct
Effectiveness of students' assessment	Program Leaders	Direct
Quality of learning resources	Peer Reviewer	Indirect
The extent to which CLOs have been achieved	Program Leaders	Direct
Other	-	-

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

Assessment Methods (Direct, Indirect)

G. Specification Approval Data:

COUNCIL /COMMITTEE	Department of Biology Council
REFERENCE NO.	Meeting No. 6
DATE	29/9/2024