Course Specifications

Course Title:	**Research Project**
Course Code:	**23044491-2**
Program:	**Bachelor of Mathematics**
Department:	**Mathematics Department**
College:	**Jamoum University College**
Institution:	**Umm Al-Qura University**

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A. Course Identification

1. Credit hours:	
2. Course type	
a. University ☐ College ☐ Department ☑ Others ☐	
b. Required ☑ Elective ☐	
3. Level/year at which this course is offered:	The eighth level/ Fourth year
4. Pre-requisites for this course (if any)**:**	
5. Co-requisites for this course (if any)**:** Two conditions: Department Approval / Passing 50 hours of mathematical courses.	

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**		
4	**Correspondence**	✓	100
5	**Other**		

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	**15**
2	**Laboratory/Studio**	
3	**Tutorial**	**12**
4	**Others** (specify) **seminar**	**3**
	Total	**30**
Other Learning Hours*		
1	**Study**	**30**
2	**Assignments**	
3	**Library**	**45**
4	**Projects/Research Essays/Theses**	**40**
5	**Others** (specify)	
	Total	**115**

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

Encouraging students to collect problems from web based reference material and supervise classroom discussions.
Update references used in teaching process.
Inviting students to attend seminars given by research groups in the department.
participate in the preparation of local seminars
Use e-learning facilities more efficiently.
Use computer packages for solving exercise .
Manage software for applications in the corresponding topic

2. Course Main Objective

Introduce students to emerge mathematical subjects and to improve their knowledge background and skills in this area.
Introduce the students to research atmosphere.
Help students to make a fruitful discussion in a mathematical question or problem.
Gaining knowledge about the resources for obtaining the information which will help in outgoing research.
Using library, computers and internet for obtaining the required information for handling excellent research.
Getting knowledge about how to write scientific reports.
Implement a small research project.
Make a presentation using up to date presentation packages.
Choosing the appropriate mathematical topic and the corresponding references.
Focus on ethical standards in research, such as guidelines for authorship and copyright, and data-sharing policies while encouraging collaboration.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge:**	
1.1	outline the library, the software packages, the scientific online	
1.2	Select published research	
1.3	Identify the norms and methods of scientific research	
1.4	Write a scientific research	
1.5	Determine the communication of scientific by e-mail	
1.6	Define a scientific question.	
1.7	Learn about presentation of important results	
2	**Skills :**	
2.1	Apply the uses of internet in the scientific research	
2.2	Compare between Ways and means of collecting information through the library, a computer, or online scientific.	
2.3	Explain a mathematical problem in one of the scientific subjects.	
2.4	Analyze the problem and write a work plan.	
2.5	Summarize the solution of the problem theoretically and practically.	

CLOs		Aligned PLOs
2.6	Comparison of the problem with some others.	
2.7	Develop scientific discussions.	
2.8	Solve problems using references.	
2.9	show the ability to work independently and within groups.	
3	**Competence:**	
3.1	Apply software to build examples and applications effectively.	
3.2	Use the internet to write reports about the subject.	

C. Course Content

No	List of Topics	Contact Hours
1	Introduce a subject selected by the lecturer.	2
2	Ways and means of collecting information through the library and online scientific recourses.	2
3	Lear about journals, workshops, seminars, talks, conference, dissertation, report, books, research papers, scientific communications, patent publications, posters, scientific article, impact factor, etc.	2
4	How to find and read appropriate references and software.	2
5	How to introduce and solve the problem theoretically and practically.	2
6	Learn about writing results before submitting them.	2
7	Choose a subject and few elementary references.	2
8	Develop some of the results therein.	6
9	Preparation of a first version of the report.	4
10	Discussion of the report and making corrections.	4
11	Prepare a presentation and give a plenary talk (department seminar)	2
12	Introduce a subject selected by the lecturer.	2
13	Ways and means of collecting information through the library and online scientific recourses.	2
14	Lear about journals, workshops, seminars, talks, conference, dissertation, report, books, research papers, scientific communications, patent publications, posters , scientific article, impact factor, etc.	2
15	How to find and read appropriate references and software.	2
Total		30

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**		
1.1	Draft report	1st -12th week	10 %
1.2	Final report	13th week	40%
1.3	Presentation	14th week	20%
1.4	A talk (seminar)	15th week	30%
2.0	**Skills**		
2.1			
2.2			

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
…			
3.0	**Competence**		
3.1			
3.2			
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Draft report	1st -12th week	10 %
2	Final report	13th week	40%
3	Presentation	14th week	20%

***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 :

Supervisor

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	
Essential References Materials	
Electronic Materials	
Other Learning Materials	

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Supervisor Room
Technology Resources (AV, data show, Smart Board, software, etc.)	Research papers and books selected by the lecturer according to the proposed subjects.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Recommended Books and Reference Material (Journals, Reports, etc) (Attach List**):** All available research sources such as library and

Item	Resources
	internet. Publishers such as Elsevier, Springer, etc.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods

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	
Reference No.	
Date	