



Course Specifications

Course Title:	Research Project
Course Code:	30114303-2
Program:	BSc. Mathematics 301100
Department:	Department of Mathematics
College:	Al-Leith University College
Institution:	Umm Al-Qura University

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A. Course Identification

1. Credit hours:			
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: The eighth level/ Fourth year			
4. Pre-requisites for this course (if any): None			
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 hours) x(15 weeks)	100%
2	Blended	0	0%
3	E-learning	0	0%
4	Correspondence	0	0%
5	Other	0	0%

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	Lecture	(1 hours) x (15 weeks)
2	Laboratory/Studio	0
3	Tutorial	12 hours
4	Others (seminar)	3 hours
	Total	30 hours
Other Learning Hours*		
1	Study	30 hours
2	Assignments	0
3	Library	45 hours
4	Projects/Research Essays/Theses	40 hours
5	Others (groupwork)	0
	Total	115 hours

* 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

During the semester, students will be conducting and managing their individual projects of Research under the guidance of their supervisors. In addition, students are invited to attend seminars organized by the research groups within the department.

2. Course Main Objective

The aim of the course is to enable students to develop, manage and conduct an individual project of research in design innovation; select and apply appropriate methods; analyses and evaluate outcomes; and articulate the process, choosing a suitable format. In particular, the following objectives are:

- Write a research work using desirable an organized scientific mode.
- Guide the students to self-learning and training them to come up with objective conclusions.
- Train the students to be self-dependent in collecting the required data through personal efforts.
- Train the student to collect the data from various resources.
- Train the student how to write mathematical reports and research. - Train the student how to present and defend scientific topic in front of a number of audience.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	Knowledge:	
1.1	Outline the library, the software packages, the scientific online	K2
1.2	Select published research	K2
1.3	Identify the norms and methods of scientific research	K1
1.4	Define a scientific question.	K3
1.5	Learn about presentation of important results	K5
2	Skills :	
2.1	Compare between Ways and means of collecting information through the library, a computer, or online scientific.	S1
2.2	Explain a mathematical problem in one of the scientific subjects.	S7
2.3	Write a work plan.	S8
2.4	Summarize the solution of the problem theoretically and practically.	S6
2.5	Comparison of the problem with some others.	S2
2.6	Develop scientific discussions.	S2
2.7	Solve problems using references.	S4
3	Competence:	
3.1	Apply software to build examples and applications effectively.	C2
3.2	Use the internet to write reports about the subject.	C4
3.3	Write a scientific research	C3
3.4	Apply the uses of internet in the scientific research	C4
3.5	Determine the communication of scientific by e-mail	C1

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	Outline the library, the software packages, the scientific online	Lectures Discussion Problem Solving Brain Storming	Assignments. Reports. Quizzes.
1.2	Select published research		
1.3	Identify the norms and methods of scientific research		
1.4	Define a scientific question.		
1.5	Learn about presentation of important results		
2.0	Skills		
2.1	Compare between Ways and means of collecting information through the library, a computer, or online scientific.	Lectures Discussion Problem Solving Brain Storming	Assignments. Reports. Quizzes.
2.2	Explain a mathematical problem in one of the scientific subjects.		
2.3	Write a work plan.		

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
2.4	Summarize the solution of the problem theoretically and practically.		
2.5	Comparison of the problem with some others.		
2.6	Develop scientific discussions.		
2.7	Solve problems using references.		
3.0	Competence		
3.1	Apply software to build examples and applications effectively.	Lectures Brain storming Tasks to measure students' personal skills.	Assignments. Reports. Discussion.
3.2	Use the internet to write reports about the subject.		
3.3	Write a scientific research		
3.4	Apply the uses of internet in the scientific research		
3.5	Determine the communication of scientific by e-mail		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Draft report	1 st -12 th week	10 %
2	Final report	13 th week	40%
3	Presentation	14 th week	20%
4	A talk (seminar)	15 th week	30%

*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 :

- 1- There is a student advisor committee for the students.
- 2- The office hours for the staff is depicted on their office.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	Research papers and books are selected by the speaker according to the topics proposed.
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 are selected by the speaker according to the topics proposed.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	All available research sources such as library and internet. Publishers such as Elsevier, Springer, etc.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	deanship of registration and acceptance	Student feedback through electronic survey
Quality of learning resources	Program Leaders	Student feedback through electronic survey
Evaluation of the teachers by internal & external faculty members	Program Leaders	Course Reports, evaluation of random grading report
Program Quality	Peer Reviewer	Peer evaluation and feedback

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	Council of the Mathematics Department	The mathematical sciences (college of applied sciences) and the mathematics (Al-Leith University College) department's first meeting of the coordinative committee
Reference No.	4101050782	First meeting
Date	Sunday, 17 November 2019	Thursday, 17 October 2019

Department Head



Dr. Ali Hassani