جامعة الزيتونة الأردنية

Al-Zaytoonah University of Jordan

Course Syllabus

According to JORDAN National Qualification Framework (JNQF)

Course Name: Research Seminar in Mathematics

Course Number: 0101462

General Course Information:

Course Title	Research Seminar in Mathematics
Course Number	0101462
Credit Hours	3 credit hours
Education Type	Traditional learning & periodic meetings with faculty member who is in charge
Prerequisites/Co-requisites	Department approval
Academic Program	Mathematics
Program Code	
Faculty	Faculty of Information Technology
Department	Mathematics
Level of Course	B.Sc
Academic Year /Semester	2023/2024 1st Semester
Awarded Qualification	Bachelor of Science in mathematics
Other Department(s) Involved in Teaching the Course	-
Language of Instruction	English
Date of Production	2021-2022
Date of Revision	16-10-2023

Course Coordinator:

Coordinator's Name	Dr. Waseem Ghazi Alshanti
Office No.	117
Office Phone Extension Number	-
Office Hours	-
E-mail	w.alshanti@zuj.edu.jo

Other Instructors:

Instructor Name	
Office No.	
Office Phone Extension Number	
Office Hours	
Email	

Course Description *(English/Arabic)*:

English	This course is considered as a comprehensive project in which the student applies the knowledge and skills accumulated from different courses in some area of mathematics. These areas include but not limited to: linear algebra, differential equation, mathematical modeling, optimization and operations research, graph theory, numerical methods, computational mathematics, financial mathematics, probability, and statistics.
Arabic	**يعتبر هذا المقرر بمثابة مشروع شامل يطبق فيه الطالب المعرفة والمهارات المتراكمة من المقررات المختلفة في بعض مجالات الرياضيات. تشمل هذه المجالات على سبيل المثال لا الحصر: الجبر الخطي، والمعادلة التفاضلية، والنمذجة الرياضية، والتحسين وبحوث العمليات، ونظرية الرسم البياني، والطرق العددية، والرياضيات الحسابية، والرياضيات المالية، والاحتمالات، والإحصاء.**

Textbook: *Author(s), Title, Publisher, Edition, Year, Book website.*

Any related textbook.

References: *Author(s), Title, Publisher, Edition, Year, Book website.*

Any related textbook.

Course Educational Objectives (CEOs):

CEO1	To be able to Identify the steps required to carry out the work.
CEO2	To be able to apply the knowledge and skills accumulated from different courses.
CEO3	To be able to present a seminar in front of his colleges and teachers.

Intended Learning Outcomes (ILO's):

Intended learning outcomes (ILOs)		**Relationship to CEOs**	**Contribution to PLOs**	**Bloom Taxonomy Levels***	**JNQF Descriptors ****
K	**Knowledge and Understanding**				
ILO1-k	Student will be able to identify the steps required to carry out the work.	CEO 1	PLO1-k PLO2-k	Remembering	K
S	**Intellectual skills**				
ILO2-s	Student will be able to apply the knowledge and skills accumulated from different courses to a representation of reality.	CEO 2	PLO6-s	Analysing	S
ILO3-s	Student will be able to present either alone or with team his work in order to be judged.	CEO 3	PLO6-s	Applying	S
C	**Subject specific skills**				
ILO4-c	Student will be able to write a comprehensive report on the work.	CEO 3	PLO11-C PLO12-C	Applying	C

***Bloom Taxonomy Levels:**

Level #	1	2	3	4	5	6
Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

**** Descriptor (National Qualification Framework Descriptors): K: Knowledge, S: Skill, C: Competency.**

Program Learning Outcome (PLOs):

	(PLOs)	JNQF Descriptors**		
		K	S	C
1.	Knowledge of the main concepts in pure mathematics.	√		
2.	Knowledge of the main concepts in applied mathematics.	√		
3.	Explain concepts, principles and theories in the fields of probability and statistics.	√		
4.	Possession of technological culture related to the fields of mathematics and its applications.	√		
5.	Making use of mathematical logic in practical life.		√	
6.	Engaging scientific methodology as a way of thinking and as a tool in facing problems.		√	
7.	Applying mathematical software packages in problem solving.		√	
8.	Being capable of data analysis.		√	
9.	Capability of teaching according to modern educational techniques.		√	
10.	Develop creative and innovative methods of teaching mathematics.		√	
11.	Showing the ability to work under ethical and professional standards within teams.			√
12.	Gaining critical thinking and scientific research skills.			√

**** Descriptors according to the national qualifications framework (K: knowledge, S: skill, C: Competency)**

Weekly Schedule *(please choose the type of teaching)*

- **Face to Face (F2F)**
- **Hybrid** *(One – To - One)*
- **Online**

Schedule of Simultaneous and their Topics:

Week	Topic to be covered	----	ILOs	PLOs	JNQF Descriptors*
1	Assign mathematical problems which may be theoretical, practical, or computations.	----	ILO1-k	PLO1-k PLO2-k	K
2	Write a proposal including time table for implementation	----	ILO1-k	PLO1-k PLO2-k	K
3-5	Study the problem assigned and its theoretical background and conduct a literature review	----	ILO1-k	PLO1-k PLO2-k	K
6-8	Set the approach and make the problem analysis and preliminary design.	----	ILO2-s	PLO6-s	S
9-11	Carry out detailed design, construction and testing (if any).		ILO3-s	PLO6-s	**S**
12-13	Write a comprehensive report on the work as the format posted on the department website.	----	ILO4-c	PLO11-c PLO12-c	C
14-15	Present with your team your work in order to be judged		ILO4-c	PLO11-c PLO12-c	C

* **K: Knowledge, S: Skills, C: Competency**

Teaching Methods and Assignments:

- Development of ILOs is promoted through the following teaching and learning methods:
- learning through problem solving.

Course Policies:

A- Attendance policies:
Assigned meeting with supervisor.
B- Absences from exams and handing in assignments on time:
NA
C- Academic Health and safety procedures
D- Honesty policy regarding cheating, plagiarism, and misbehaviour:
Cheating, plagiarism, misbehaviour will result in zero grade and further disciplinary actions may be taken.
E- Grading policy:
Final assessments (presentation evaluation) out of 100

Required Equipment:

- PC / Laptop with webcam and mic
- Internet Connection
- Access to the ZUJ E-Learning Platform at https://exams.zuj.edu.jo/
- E-learning plan
- Satisfaction questionnaires for online and face-to-face learning

Assessment Tools Implemented in the Course:

- Final presentation

Responsible Persons and their Signatures:

Course Coordinator	Dr. Waseem Ghazi Alshanti	**Completed Date**	**October 2023**
		Signature	
Received by (Department Head)		**Received Date**	/ /
		Signature	