جامعة الزيتونة الأردنية

Al-Zaytoonah University of Jordan

Course Syllabus

According to JORDAN National Qualification Framework (JNQF)

Course Name: History of Mathematics

Course Number: 0101363

General Course Information:

Course Title	History of Mathemtics
Course Number	0101363
Credit Hours	3 credit hours
Education Type	Blended learning
Prerequisites/Co-requisites	……..
Academic Program	Bachelor Program
Program Code	101
Faculty	Faculty of Science and IT
Department	Mathematics
Level of Course	3
Academic Year /Semester	2023/2024 1st Semester
Awarded Qualification	Bachelor
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	
Office No.	
Office Phone Extension Number	
Office Hours	
E-mail	

Other Instructors:

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

Course Description *(English/Arabic)*:

English	This course is a brief history of mathematics and includes: Development of the arithmetica, Logistic of natural numbers, Mechanical aids to calculation, Artificial numbers, Geometry, Algebra, Trigonometry, Measures, The calculus history.
Arabic	هذا المساق يعطي نبذة تاريخية مبسطة عن الرياضيات ويجتوي: تطوير الحساب، لوجستية الأعداد الطبيعية، الوسائل الميكانيكية للحساب، الأرقام الاصطناعية، الهندسة، الجبر، علم المثلثات، المقاييس، تاريخ حساب التفاضل والتكامل.

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

Smith, D. E. (2010), History of mathematics, USA, Dover publications, INC

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

Carl, B. (2010), A history of mathematics, 2nd edition, USA, John Wily and sons.

Course Educational Objectives (CEOs):

CEO1	Explore the mathematical achievements of ancient civilizations, such as Babylonians, Egyptians, Greeks, and Indians, including their contributions to number theory, geometry, and algebra.
CEO2	Study the transition from ancient mathematics to the mathematical revolution of the Renaissance, examining the work of mathematicians like Euclid, Archimedes, and Fibonacci.
CEO3	Explore the mathematical contributions of the Enlightenment era, including the work of Euler, d'Alembert, and Lagrange.

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	Knowing the stages of development of mathematics from ancient times to modern times	CEO2	PLO1-k	Understanding	K
ILO2-k	Knowledge of ancient scholars and their achievements	CEO2	PLO2-k	Understanding	K
S					
ILO3-s	Developing mathematical ideas by studying the experiences of previous scientists	CEO1	PLO8-s	Analyzing	S
C					
ILO4-c	Cooperate to work effectively in the group assignments.	CEO3	PLO11-c	Applying	C
D	Transferable skills:				
ILO5-d					

***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	First Lecture (F2F)	Second Lecture	ILOs	PLOs	JNQF Descriptors*
1	Early writers on number theory, Names and arithmetic, Elementary classifications of numbers	Activity: Self-reading	1	1	K
2	Fundamental operations, Reading and writing numbers	Activity: Video 1 Solving exercises	3	7	S
3	Addition, Subtraction, Multiplication, Division, Roots	Activity:Home work1: On the subjects studied on the first three weeks	3	8	S
4	Finger reckoning, Modern calculating	Activity:Quiz 1	1	1	K

	machines				
5	Common fraction, Decimal fractions, Negative numbers	Activity:Assignment 1: On Frenet- Serret frame	3	7	S
6	Complex numbers, Transcendental numbers	Activity:Video 2	3	8	S
7	General progress of elementary geometry, Technical terms of Euclidean geometry	Activity:Home work 2 On the subjects studied in the weeks 4,5 and 6	2	1	K
Midterm Exam (30%)					
9	Axioms and postulates	Activity: Assignment 2: On Bertrand curves	1	5	K
10	Analytic geometry, Modern geometry	Activity: Self-reading	3	8	S
11	General progress of algebra, Symbols of algebra, Fundamental operations	Activity: Video3 Solving exercises	1	1	K
12	The writing of equations, The solution of equations, Determinents	Activity:Quiz 2	3	7	S
13	Series, Logarithms, Probability	Activity: General development of trigonometry Trigonometric functions Self-reading	3	8	S
14	Weight, Length, Areas, Capacity	Activity: Greek ideas of a calculus, Modern forerunners of the calculus Self-reading	4	10	C
15	**Projects Discussion**				
16	**Final Exam**				

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

Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

- Lecture.
- learning through projects.
- learning through problem solving.

Course Policies:

A- Attendance policies:
The maximum allowed absences is 15% of the lectures.
B- Absences from exams and handing in assignments on time:
Midterm exam can be retaken based on approval of excuse by the instructor's discretion.
Not handing assignment on time will incur penalties.
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:

- All homework is to be posted online through the e-learning system.
- Exams will be marked within 72 hours and the marked exam papers will be handed to the students.
- Online Activities (Course Videos, Discussion Forums, Quizzes) **20%**
- Midterm 30**%**
- Final Exam 50**%**

F- Available university services that support achievement in the course: **E-Learning Platform, Labs, Library.**

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

Assessment Tools Implemented in the Course:

- Final Exam
- Midterm Exam
- Quizzes
- Homework
- Periodic reports for learning assessment
- Improvement plans for online or face-to-face teaching.

Responsible Persons and their Signatures:

Course Coordinator	Waseem Almashaaleh	**Completed Date**	**Oct / 2023**
		Signature	

Received by (Department Head)		**Received Date**	/ /
		Signature	