Al-Zaytoonah University of Jordan

Course Syllabus
According to JORDAN National Qualification Framework (JNQF)

Course Name: Methods of Teaching Mathematics

Course Number: 0101361

General Course Information:

Course Title	Methods of Teaching Mathematics
Course Number	0101361
Credit Hours	3 credit hours
Education Type	Blended learning
Prerequisites/Co-requisites	Non
Academic Program	Mathematics
Program Code	114
Faculty	Faculty of Information Technology
Department	Mathematics
Level of Course	4
Academic Year /Semester	2023/2024 1st Semester
Awarded Qualification	BS'c
Other Department(s) Involved in Teaching the Course	-
Language of Instruction	English
Date of Production	2021-2022
Date of Revision	October 2023

Course Coordinator:

Coordinator's Name	Dr. Haitham Qawaqneh
Office No.	229
Office Phone Extension Number	
Office Hours	11-12:30 Sunday-Wednesday
E-mail	h.alqawaqneh@zuj.edu.jo

Other Instructors:

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

Course Description *(English/Arabic)*:

English	*This course introduces students to a variety of modern methods for teaching mathematics by distinguishing between the behaviorist teaching methodologies and the more recent constructivist methods of teaching. In addition, this class familiarizes students with the standards of the NCTM. It also develops students' abilities to prepare lesson plans and compose valid exams.*
Arabic	يعرض هذا المقرر مجموعة متنوعة من الأساليب الحديثة لتدريس الرياضيات من خلال التمييز بين منهجيات التدريس السلوكية وأساليب التدريس البنائية الحديثة. بالإضافة إلى ذلك، يعرّف هذا الفصل الطلاب بمعايير NCTM. كما أنه ينمي قدرات الطلاب على إعداد خطط الدروس وتأليف الاختبارات الصحيحة.

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

Mathematics Curriculum and Teaching Methods, Ibrahim AqilanDar Al-Masirah for Publishing and Distribution, 3rd Edition, 2018.

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

1. Teaching mathematics to all children, William Obeid, 4th Edition, 2015.   2. Mathematics books for the basic stage, Ministry of Education, Jordan, 2016.   3. School mathematics curricula, Farid Abu Zina, 3rd floor, Amman, 2013.

Course Educational Objectives (CEOs):

CEO1	Students will be able to provide evidence of knowledge of the literature related to teaching and learning within each of the content strands of middle/secondary Mathematics.
CEO2	Students will be able to provide evidence of knowledge of various models of mathematical understanding and their relationship to teaching and learning middle and secondary school mathematics.
CEO3	Students will be able to provide evidence of knowledge of application of learning theories to mathematics teaching.
CEO4	Students will demonstrate the ability to plan lessons using various methods of instruction in light of student learning needs and content.
CEO5	Students will demonstrate the ability to discuss student preparation for and critique of standardized exams.

Intended Learning Outcomes (ILO's):

Intended learning outcomes (ILOs)		Relationship to CEOs	Contribution to PLOs	Bloom Taxonomy Levels*	JNQF Descriptors**
K	Knowledge and Understanding				
1. **ILO1-k**	Students will be knowing the parts of knowledge in mathematics and methods of teaching each part.	CEO1	PLO2-k	Remembering	k
2. **ILO2-k**	Students will be writing the educational goals with all kinds.	CEO1	PLO2-k	Understanding	K
S	Intellectual skills				
3. **ILO3-s**	Students will be writing daily and annual plan for a school mathematics course.	CEO2	PLO1-k	Analysing	S
4. **ILO4-s**	Students will be writing a standardized exams and description tables.	CEO3	PLO3-k	Applying	S
C	Subject specific skills				
5. **ILO5-c**	Students will be croupy work on the steps to solve the mathematical problem according several strategies.	CEO4	PLO10-c	Applying	C
6. **ILO6-c**	Students will display positive orientations towards the beliefs that research is an important component of mathematics education and practice real lessons at every level	CEO5	PLO11-c	Applying	C

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)	Activity	ILOs	PLOs	JNQF Descriptors *
1	Mathematics concept and its importance	Activity: Reading and watching suggest link. Solving homework	ILO1-k	PLO5-k	K
2	Elements of mathematical knowledge	Activity: Reading and watching suggest link.	ILO1-k	PLO1-k PLO2-**k** PLO5-**k**	K

		Solving homework			
3	Elements of mathematical knowledge	Activity: Reading and watching suggest link. Solving homework	ILO1-k	PLO1-k PLO2-k PLO5-k	K
4	Constructivist Theory	Activity: Reading and watching suggest link. Solving homework	ILO3-s	PLO8-s PLO9-s	S
5	Practial lessons	Activity: Reading and watching suggest link. Solving homework	ILO4-s	PLO9-s	S
6	Objectives of the National Council of Teachers of Mathematics.	Activity: Reading and watching suggest link. Solving homework	ILO4-s	PLO9-s	S
7	Practical math situations do math communication in the classroom.	Activity: Reading and watching suggest link. Solving homework	ILO4-s	PLO9-s	C
**Midterm Exam (30%)**
9	The theory of multiple intelligences	Activity: Reading and watching suggest link. Solving homework	ILO2-s, ILO5-c	PLO10-s	K,S
10	Planning concept and its importance	Activity: Reading and watching suggest link. Solving homework	ILO3-s	PLO10-s	S
11	Yearly and daily planning concept	Activity: Reading and watching suggest link. Solving homework	ILO4-s	PLO10-s	S
12	Authentic Assessment	Activity: Reading and watching suggest link. Solving homework	ILO6-c	PLO10-c	C
13	Types of items in the achievement test	Activity: Students present and discuss practical lessons	ILO6-c	PLO10-c	C

14	Students present and discuss practical lessons.	Activity: Students present and discuss practical lessons	ILO6-c	PLO10-c	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.
- flipped learning.
- 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, Practice labs, 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
- Satisfaction questionnaires for online and face-to-face learning
- Software for e-learning

Assessment Tools Implemented in the Course:

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

Responsible Persons and their Signatures:

Course Coordinator	Haitham Qawaqneh	Completed Date	October 2023
		Signature	

Received by (Department Head)		Received Date	/ /
		Signature	