



جامعة آل البيت دائرة
ضمان الجودة والتخطيط

College of Science
Department of Mathematics
Course syllabus: **Research Methodology**

Math: 401702
1th semester 2020/2021

1. Instructor Information:

Instructor Name	prof. A. Al-omari		
Office Hours	Sunday , Monday, Tuesday, Wednesday, Thursday		
Office Number and Telephone Extension			
Email	omaromutah1@yahoo.com		

2. Course Description:

The course is designed for students who intend to write a master thesis in mathematics or science education. The course gives an introduction to the theory of science, discussing various research paradigms and how ontological and epistemological assumptions held by the researcher influences the employed research methods. Further, the course will give an introduction to research designs and research methods which are relevant in mathematics and science education. This entails discussing various methods for collecting and analyzing primarily qualitative data. The students carry out a small scale qualitative study that works as a pilot to the individual's master project.

3. Course Information:

Course number: 401702	Course Title Research Methodology	Level : master
Course Nature: Theoretical and online	Prerequisite: None	Lecture time:
Academic year: 2020 – 2021	Semester:	Credit Hours: 3

4. Course Objectives:

This course gives the student insight into different research traditions relevant for research in mathematics and science education. The student will develop knowledge about different research designs and different methods for collecting and analyzing data. This should enable the student to develop researchable questions and to make informed choices about collecting and analyzing data in order to design and carry out independent empirical investigations. The student should also develop knowledge about issues linked to validity and reliability as well as ethical aspects of research. This course, together with other courses and relevant theory, should enable the student to carry out a scientific inquiry and write a master thesis

5. Intended Student Learning Outcomes :

The teaching is organised as lectures and seminars. The teaching in the course will to a large extent be linked to the students' own research area for the master's thesis. The course requires a high degree of student participation and it is expected that all students contribute to discussions and other activities.

6. Course Content:

Week	Chapter	Subject	Pages and Assignments
1	<u>Chapter 1</u>	تعريف البحث العلمي خطوات البحث العلمي مقدمة البحث الجامعي كتابة خطة بحث رسالة ماجستير بالتفصيل الدراسات السابقة في البحث العلمي والرسالة	
2	<u>Chapter 2</u>	معوقات البحث العلمي أهداف البحث العلمي أنواع البحث العلمي المراحل التي يجب إتباعها عند كتابة البحث العلمي فوائد البحث العلمي بالنسبة للباحث	
3	<u>Chapter 3</u>	مصادر الحصول على المعلومات أسس وخطوات البحث الرياضي خصائص المنهج الرياضي مرحلة الكشف ومرحلة البرهان	
4	<u>Chapter 4</u>	مفهوم العلم في الرياضيات الخطوات الأساسية لكتابة بحث علمي - مقدمة الدراسة - الأدبيات السابقة	

		- منهجية البحث - تحليل المعلومات - الخلاصة والنتائج والتوصيات	
5	<u>Chapter 5</u>	مقدمة عن علم المنطق المناهج العلمية قواعد عامه لكتابة البحث	
6	<u>Chapter 6</u>	How to write a paper: 1-The Design 2- Who are your readers? 3-The Concept 4-Embodiment-The first draft 5- Grammar 6- Spelling 7- Punctuation 8- Style	

7. Text Book:

How to Write a Paper

Mike Ashby
Engineering Department,
University of Cambridge, Cambridge
6rd Edition, April 2005

كتاب مناهج البحث العلمي

المؤلفون:

موفق الحمداني

عدنان الجادري

عامر قنديلجي

فريد أبوزينه

عبد الرزاق بني هاني