



مركز الاعتماد
وإضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER



The University of Jordan

Accreditation & Quality Assurance Center

Course Syllabus

**Course Name:
Number Theory**

Course Syllabus

1	Course title	Number Theory	
2	Course number	(0331261)	
3	Credit hours	3	
	Contact hours (theory, practical)	3	
4	Prerequisites/corequisites	(0301211)	
5	Program title	B.Sc.	
6	Program code		
7	Awarding institution	The University of Jordan	
8	School	Science	
9	Department	Mathematics	
10	Course level	Compulsory Specialization requirement	
11	Year of study and semester (s)	2 nd or 3 rd 1 st and 2 nd or summer semester	
12	Other department (s) involved in teaching the course	None	
13	Main teaching language	English	
14	Delivery method	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online	
15	Online platforms(s)	<input checked="" type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams <input type="checkbox"/> Skype <input type="checkbox"/> Zoom <input type="checkbox"/> Others.....	
16	Issuing/Revision Date	3-11-2022	

17 Course Coordinator:

Name: Prof. Omar Abughneim

Contact hours: 8:30-10:00

Office number: 329

Phone number:

Email: o.abughneim



18 Other instructors:

Name:

Office number:

Phone number:

Email:

Contact hours:

Name:

Office number:

Phone number:

Email:

Contact hours:

19 Course Description:

As stated in the approved study plan.

Axiomatic systems: consistency, independence and completeness, finite projective geometry, paradoxes of Euclidean geometry, the postulates of connection, the measurement of distance, ruler postulate, order relations, plane-separation postulate, space-separation theorem, Pasch theorem, further properties of angles, triangles, congruence postulate, parallel postulate, similarity, Pythagorean theorem, theorems of Ceva and Menelous, Erdős theorem, circles, central and inscribed angles, cyclic quadrilaterals, Simson's line, nine point circle, lines and planes in space.



20 Course aims and outcomes:



A- Aims:

1. Master basic concepts and techniques of Euclidian Geometry.
2. Use these concepts and techniques in other mathematical courses.
3. Develop the ability of proving several kinds of problems in the subject

B- Students Learning Outcomes (SLOs):

Define Axiomatic method.

- A2. To identify some paradoxes in Euclidean Geometry and utilizes then to use axiomatic method in studying this Geometry.

A. Intellectual Analytical and Cognitive Skills: Student is expected to

- B1. Apply the axiomatic approach to define finite projective. Geometry and prove some theorems concerning the subject.

- B2. Define several concepts in order to make this Geometry more accurate like between concept. Considering one case of congruency as an axiom and proving all other cases.

Considering one case of similarity as an axiom and proving other cases.

Proving several main theorems: space separation Theorem, Pasch' Theorem, Cevia Theorem, Menelaus Theorem, Phythogoream Theorem.

Proving several Theorems concerning circles and related subjects.

Upon successful completion of this course, students will be able to:

SLOs	SLO (1)	SLO (2)	SLO (3)	SLO (4)	SLO (5)	SLO (6)	SLO (7)	SLO (8)
SLOs of the course								
Apply the axiomatic approach to define finite projective. Geometry and prove some theorems concerning the subject.							•	
Define several concepts in order to make this Geometry more accurate like between concept							•	
Considering one case of congruency as an axiom and proving all other cases.							•	
Proving several main theorems: space separation Theorem, Pasch' Theorem, Cevia Theorem, Menelaus Theorem, Phythogoream Theorem.							•	
								QF-AQAC-03.02.01

21 . Topic Outline and Schedule:.

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods
Finite Geometry, Projective and Affine Geometry (An axiomatic approach)	1-2		7	
Axioms of Euclidean Geometry.	3		7	
Congruence of triangles.	4-6		7	
Parallels and Parallelograms.	7-8		7	
Similar triangles.	9-10		7	
The circle.	11-12		7	
Lines and planes in space.	13-15		7	

22 Evaluation Methods:

Evaluation Activity	Mark	Topic(s)	SLOs	Period (Week)	Platform
Exam	20		7		On Campus
Midterm	30		7		On Campus
Final Exam	40		7		On Campus

23 Course Requirements

(e.g: students should have a computer, internet connection, webcam, account on a specific software/platform...etc):



24 Course Policies:

In order to succeed in this course, each student needs to be an active participant in learning – both in class and out of class.

- Class time will be spent on lecture as well as discussion of homework problems and some groupwork.
- To actively participate in class, you need to prepare by reading the textbook and doing all assigned homework before class (homework will be assigned each class period, to be discussed the following period).
- You should be prepared to discuss your homework (including presenting your solutions to the class) at each class meeting - your class participation grade will be determined by your participation in this.
- You are encouraged to work together with other students and to ask questions and seek help from the professor, both in and out of class.

25 References:

A- Required book (s), assigned reading and audio-visuals:
C.R. Wylie, JR. Foundations of Geometry. McGraw-Hill Company.

B- Recommended books, materials, and media:

الهندسة الاقليدية

د. حسن العزة + د. محمد النتشة

جامعة القدس المفتوحة

26 Additional information:

Name of Course Coordinator: Prof. Omar AbuGhneim Signature: - Date: 3-11-2022
Head of Curriculum Committee/Department: Prof. Ahmad Al Zghoul-- Signature: -----
Head of Department: -Prof. Manal Ghanem - Signature: -M. Ghanem
Head of Curriculum Committee/Faculty: ----- Signature: ----
Dean: Mahmoud Jaghoub Signature: -----