



مركز الاعتماد
و ضمان الجودة
ACCREDITATION & QUALITY ASSURANCE CENTER



The University of Jordan

Accreditation & Quality Assurance Center

COURSE Syllabus

**Course Name: Non-Euclidean
Geometry**

1	Course title	Non-Euclidean Geometry
2	Course number	(0331461)
3	Credit hours (theory, practical)	3
	Contact hours (theory, practical)	3
4	Prerequisites/corequisites	(0331261)
5	Program title	B.Sc.
6	Program code	
7	Awarding institution	The University of Jordan
8	Faculty	Science
9	Department	Mathematics
10	Level of course	Department requirements
11	Year of study and semester (s)	all Semesters
12	Final Qualification	B.Sc. in Mathematics
13	Other department (s) involved in teaching the course	None
14	Language of Instruction	English
15	Date of production/revision	1.11.2017

16. Course Coordinator:

Office numbers, office hours, phone numbers, and email addresses should be listed.

Prof. Hasan Hdeib

17. Other instructors:

Office numbers, office hours, phone numbers, and email addresses should be listed.

18. Course Description:

Study of the parallel postulate and some of its equivalent statements. Hyperbolic geometry and some basic theorems. Spherical geometry and some basic theorems

19. Course aims and outcomes:**A- Aims:**

The course aims to provide the student with essential knowledge about basic facts and definitions of hyperbolic and spherical Geometry.

B- Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to ...

1. Define the parallel postulate for hyperbolic Geometry.
2. Study basic fact about parallelism of lines in Hyperbolic Geometry.
3. Define Asymptotic Triangles.
4. Prove that the sum of the measures of the angles of any triangle is less than 180° .
5. Study congruence of triangles in Hyperbolic Geometry.
6. Define and study Saccheri Quadrilaterals.
7. Prove further results about parallel lines.
8. Study corresponding points and related loci.
9. Study spherical triangles.
10. Study cosine rules and sine rules in spherical geometry.
11. Solve spherical triangles.

20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
1) Parallelism in Euclidean Geometry and Hyperbolic Geometry	1-4		1, 2	Exam	
2) Asymptotic triangles and sum theorem and congruence.	5-7		3, 4, 5	Exam	
3) Saccheri Quadrilaterals.	8-10		6	Exam	
4) Results related to parallel lines and corresponding points.	11-12		7, 8	Exam	
5) Spherical triangles.	13-14		9	Exam	
6) Sine and cosine rules.	15		10	Exam	

Suggested Problems: All problems of the textbook.

21. Teaching Methods and Assignments:

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

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

- The instructor will spend most of the class time on presenting the new material as well as on discussing homework problems.
- Group work in this class is encouraged.
- To actively participate in class, you need to prepare by reading the textbook and to do all assigned problems before class. (Problems will be assigned each class period, then to be discussed the following period).
- You should be prepared to discuss your homework at each class meeting.
- You are encouraged to work together with other students and to ask questions and seek help from your professor, both in and out of class.
- Students are also encouraged to use graphing calculators extensively and to use computer software supplements.

22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Lectures and Exams

23. Course Policies:**24. Required equipment:**

Data Shows

25. References:

A- Required book (s), assigned reading and audio-visuals:

Foundation of Geometry, C.R. Wylie
McGraw-Hill

B- Recommended books, materials, and media:

Non-Euclidean Geometry, H.S.M. Coxeter

26. Additional information:

Name of Course Coordinator: Dr. Hasan Hdeib Signature: ----- Date: 1/11/2017

Head of curriculum committee/Department: Dr. Emad Abu Osba Signature: -----

Head of Department: Dr. Baha Alzalg Signature: -----

Head of curriculum committee/Faculty: Dr. Amal Al-Aboudi Signature: -----

Dean: Dr. Sami Mahmood Signature: -----

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Head of Department
Assistant Dean for Quality Assurance
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