



Form: Course Syllabus	Form Number	EXC-01-02-02A
	Issue Number and Date	2/3/24/2022/2963 05/12/2022
	Number and Date of Revision or Modification	
	Deans Council Approval Decision Number	2/3/24/2023
	The Date of the Deans Council Approval Decision	23/01/2023
	Number of Pages	08

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.	School/ Center	Science
8.	Department	Mathematics
9.	Course Level	Elective Specialization requirement
10.	Year of Study and Semester (s)	3 rd or 4 th year, 1 st and 2 nd or summer semester
11.	Other Department(s) Involved in Teaching the Course	None
12.	Main Learning Language	English
13.	Learning Types	<input checked="" type="checkbox"/> Face to face learning <input type="checkbox"/> Blended <input type="checkbox"/> Fully online
14.	Online Platforms(s)	<input type="checkbox"/> Moodle <input checked="" type="checkbox"/> Microsoft Teams
15.	Issuing Date	22-10-2024
16.	Revision Date	

17. Course Coordinator:

Name: Dr. Ayat Ababneh	Contact hours: S/T/W 10:30-11:30
Office number: 228	Phone number: (N/A)
Email: a.ababneh@ju.edu.jo	



18. Other Instructors:

Name:
Office number:
Phone number:
Email:
Contact hours:
Name:
Office number:
Phone number:
Email:
Contact hours:

19. 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.

20. Program Student Outcomes (SO's):

(To be used in designing the matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program)

7. Utilize research methods, critical and creative thinking skills to assess and analyze information) to solve problems properly, then draw valid reasoning and logical conclusions leading to true consequences.

21. Course Intended Learning Outcomes (CLO's):

(Upon completion of the course, the student will be able to achieve the following intended learning outcomes)

1. Define the parallel postulate for Hyperbolic Geometry.
2. Define asymptotic triangles.
3. Prove that the sum of the measures of the angles of any triangle is less than 180.
4. Define and study the Saccheri Quadrilaterals.
5. Prove further results about parallel lines.
6. Introduce Elliptic Geometry (Spherical Geometry.)



Course CLOs	The learning levels to be achieved					
	Remembering	Understanding	Applying	Analysing	evaluating	Creating
1		■				
2	■					
3		■	■	■		
4	■	■				
5		■	■	■		
6		■	■			

22. The matrix linking the intended learning outcomes of the course with the intended learning outcomes of the program:

Course CLO's	Program SO's							
	SO (1)	SO (2)	SO (3)	SO (4)	SO (5)	SO (6)	SO (7)	SO (8)
CLO (1)							■	
CLO (2)							■	
CLO (3)							■	
CLO (4)							■	
CLO (5)							■	
CLO (6)							■	



23. Topic Outline and Schedule:

Week	Lecture	Topic	CLO/s Linked to the Topic	Learning Types Face to Face (FF) Blended (BL) Fully Online (FO)	Platform Used	Synchronous (S) Asynchronous (A)	Evaluation Methods	Larning Resources
1	1.1	Parallelism in Euclidean Geometry and Hyperbolic Geometry	7	FF	Teams	S	Exam	Textbook
	1.2	Parallelism in Euclidean Geometry and Hyperbolic Geometry	7	FF	Teams	S	Exam	Textbook
	1.3	Parallelism in Euclidean Geometry and Hyperbolic Geometry	7	FF	Teams	S	Exam	Textbook
2	2.1	Parallelism in Euclidean Geometry and Hyperbolic Geometry	7	FF	Teams	S	Exam	Textbook
	2.2	Parallelism in Euclidean Geometry and Hyperbolic Geometry	7	FF	Teams	S	Exam	Textbook
	2.3	Parallelism in Euclidean Geometry and Hyperbolic Geometry	7	FF	Teams	S	Exam	Textbook
3	3.1	Parallelism in Euclidean Geometry and Hyperbolic Geometry	7	FF	Teams	S	Exam	Textbook
	3.2	Parallelism in Euclidean Geometry and Hyperbolic Geometry	7	FF	Teams	S	Exam	Textboo
	3.3	Parallelism in Euclidean Geometry and Hyperbolic Geometry	7	FF	Teams	S	Exam	Textbook
4	4.1	Parallelism in Euclidean Geometry and Hyperbolic Geometry	7	FF	Teams	S	Exam	Textbook



	4.2	Parallelism in Euclidean Geometry and Hyperbolic Geometry	7	FF	Teams	S	Exam	Textbook
	4.3	Parallelism in Euclidean Geometry and Hyperbolic Geometry	7	FF	Teams	S	Exam	Textbook
5	5.1	Asymptotic triangles and sum theorem and congruence.	7	FF	Teams	S	Exam	Textbook
	5.2	Asymptotic triangles and sum theorem and congruence.	7	FF	Teams	S	Exam	Textbook
	5.3	Asymptotic triangles and sum theorem and congruence.	7	FF	Teams	S	Exam	Textbook
6	6.1	Asymptotic triangles and sum theorem and congruence.	7	FF	Teams	S	Exam	Textbook
	6.2	Asymptotic triangles and sum theorem and congruence.	7	FF	Teams	S	Exam	Textbook
	6.3	Asymptotic triangles and sum theorem and congruence.	7	FF	Teams	S	Exam	Textbook
7	7.1	Asymptotic triangles and sum theorem and congruence.	7	FF	Teams	S	Exam	Textbook
	7.2	Asymptotic triangles and sum theorem and congruence.	7	FF	Teams	S	Exam	Textbook
	7.3	Asymptotic triangles and sum theorem and congruence.	7	FF	Teams	S	Exam	Textbook
8	8.1	Saccheri Quadrilaterals.	7	FF	Teams	S	Exam	Textbook
	8.2	Saccheri Quadrilaterals.	7	FF	Teams	S	Exam	Textbook
	8.3	Saccheri Quadrilaterals.	7	FF	Teams	S	Exam	Textbook
9	9.1	Saccheri Quadrilaterals.	7	FF	Teams	S	Exam	Textbook
	9.2	Saccheri Quadrilaterals.	7	FF	Teams	S	Exam	Textbook
	9.3	Saccheri Quadrilaterals.	7	FF	Teams	S	Exam	Textbook
10	10.1	Saccheri Quadrilaterals.	7	FF	Teams	S	Exam	Textbook
	10.2	Saccheri Quadrilaterals.	7	FF	Teams	S	Exam	Textbook
	10.3	Saccheri Quadrilaterals.	7	FF	Teams	S	Exam	Textbook
11	11.1	Results related to parallel lines and corresponding	7	FF	Teams	S	Exam	Textbook
	11.2	points.	7	FF	Teams	S	Exam	Textbook
	11.3	Results related to parallel lines and corresponding	7	FF	Teams	S	Exam	Textbook
12	12.1	points.	7	FF	Teams	S	Exam	Textbook
	12.2	Results related to parallel lines and corresponding	7	FF	Teams	S	Exam	Textbook
	12.3	points.	7	FF	Teams	S	Exam	Textbook
13	13.1	Spherical triangles.	7	FF	Teams	S	Exam	Textbook



	13.2	Spherical triangles.	7	FF	Teams	S	Exam	Textbook
	13.3	Spherical triangles.	7	FF	Teams	S	Exam	Textbook
14	14.1	Spherical triangles.	7	FF	Teams	S	Exam	Textbook
	14.2	Spherical triangles.	7	FF	Teams	S	Exam	Textbook
	14.3	Spherical triangles.	7	FF	Teams	S	Exam	Textbook
15	15.1	Sine and cosine rules.	7	FF	Teams	S	Exam	Textbook
	15.2	Sine and cosine rules.	7	FF	Teams	S	Exam	Textbook
	15.3	Sine and cosine rules.	7	FF	Teams	S	Exam	Textbook
16			7				Final Exam	

24. Evaluation Methods:

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

Evaluation Activity	Mark	Topic(s)	CLO/s Linked to the Evaluation activity	Period (Week)	Platform
Exam	20		7	Week 6	On campus
Midterm	30		7	Week 11	On campus
Final	50		7	Week 16	On campus

25. Course Requirements:

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



26. Course Policies:

- A.** Attendance policies: Attendance is essential to succeeding in this course. You are expected to attend every class; please notify your instructor if you know you are going to be absent. If a student is absent for more than 15% of lectures without an excuse of sickness or due to other insurmountable difficulty, then he/she shall be barred from the final examination also he/she will get a failing grade in this course. Medical certificates should be given to the University Physician to be authorized by him. They should be presented to the Dean of the Faculty within two weeks of the student's ceasing to attend classes.
- B.** Absences from exams and submitting assignments on time: All exams must be taken at the scheduled time. Exceptions will be made only in extreme circumstances, by prior arrangement with the instructor.
- C.** Health and safety procedures:
- D.** Honesty policy regarding cheating, plagiarism, misbehavior: Cheating is prohibited. The University of Jordan regulations on cheating will be applied to any student who cheats in exams or on homework
- E.** Grading policy: Exam papers shall be returned to students after correction. His/her mark is considered final after a lapse of one week following their return.
- F.** Available university services that support achievement in the course

27. 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:

Coxeter, H. S. M. (1998). Non-Euclidean geometry (6. ed.). Washington, DC: MAA, Math. Assoc. Of America.



28. Additional information:

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Name of the Instructor or the Course Coordinator: Dr. Ayat Ababneh	Signature:	Date: 26-10-2024
Name of the Head of Quality Assurance Committee/ Department: Prof. Manal Ghanem	Signature:	Date:
Name of the Head of Department: Prof. Baha Alzalg.	Signature:	Date:
Name of the Head of Quality Assurance Committee/ School of Science: Prof. Emad A. Abuosba	Signature:	Date:
Name of the Dean or the Director: Prof. Mahmoud I. Jaghoub	Signature:	Date: