Faculty: Faculty of Science
Department: Mathematics   Program: Bachelors

Course Plan

First: Course Information

Course No.: (0301341)	Course Title: Euclidian Geometry	Credit Hours: 3
Prerequisite: Logic & Set Theory (0103151)	Section No.: 1	Lecture Time: 1-2
Level in JNQF	7	
Type Of Course:	☐ Obligatory Faculty Requirement ☐ Elective University Requirement ☐ Obligatory University Requirement ☐ Faculty Requirement ☐ Course Elective Specialty Requirement ■ Obligatory Specialization requirement	
Type of Learning:	☐ Face-to-Face Learning ■ Blended Learning (2 Face-to-Face + 1Asynchronous) ☐ Online Learning (2 Synchronous+1 Asynchronous)	

Third: Short Description of the Course

Axiomatic system and Euclidean axioms, Hilbert axioms of connectedness, betweenness and Congruence, distance, angels and the parallel axiom. Equivalences to the Euclidean fifth postulate, similarity of triangles, Pythagorean theorem and its inverse, parallelograms and circles.

Fourth: Learning Source

Designated Book:	Euclidean and non- Euclidean Geometries, 2008, last edition,	
Author: Marvin .Jay Greenberg	Publisher: Freeman/Worth; 4th edition	Year: 2008
Additional Sources: Website:	Foundation of Euclidean and non- Euclidean Geometries, F. Klein, Pergamon press, oxford	
Teaching Type:	Classroom, Moodle	

Fifth: Course Objectives

1) To set up good knowledge about the fundamental concepts of Euclidean geometry.

2) To introduce the students to Euclid's Fifth postulate.

3) To familiarize the students with the Straightedge and compass constructions.

4) To introduce the main properties of similarity, congruence and Axioms of Betweenness

5) To understand all the properties of triangles, quadrilaterals, polygons as well as circle theorems.

6) To provide the students with the ability to Hilbert's Axioms and flaws in Euclid to help the students acquire cognitive skills through thinking and problem-solving.

Sixth: Learning Outcomes

Level descriptor according to (JNQF)	CILOs Code	CILOs	Associated PILOs Code Choose one PILO for each CILO*	Assessment method** Choose at least two methods	Scores out of 100 State the total score identified for each CILO	Minimum acceptable Score/percentage (%) The percentage should not be less than 50% ***
Knowledge	K1	Define the basic concepts in Euclidian geometry	PK1	Mid Exam, Final Exam, Quizzes	10	5 (50%)
	K2	Know the analytical procedures for solving geometrical problems	PK3	Mid Exam, Final Exam, Quizzes	10	5 (50%)
	K3	Characterize the properties of triangles, polygons and circles and realize the importance of some of their applications	PK2	Mid Exam, Final Exam, Quizzes Assignment	20	10 (50%)
Skills	S1	Constructing a proof of theorems.	PS1	Mid Exam, Final Exam, Quizzes, Assignment	16	8 (50%)
	S2	Solve geometrical problems including congruence and similarity and area problems	PS3	Mid Exam, Final Exam, Quizzes, Assignment	28	14 (50%)

Competencies	C1	Self-learning specific topics in geometry and working in a team to handle some advanced topics in geometry	PC1	Mid Exam, Final Exam, Quizzes, Assignment	12	6 (50%)
	C2	Presents geometrical theorems and how to visualize them and apply them in real-life problems	PC2	Assignment	4	2 (50%)

Sixth: Course Structure

Intended Teaching Outcomes (ILOs)	Topics	Teaching Procedures*	Teaching Methods**	References***
K1, K2	Very Brief Survey of Beginning of Geometry	Face-to-Face	Lectures, cooperative learning and discussion	
K1, K2, S1,	Very Brief Survey of Beginning of Geometry	Face-to-Face	Lectures, cooperative learning and discussion	
K1,K2,S1, S2, C1	Very Brief Survey of Beginning of Geometry	Asynchronous	Self-reading, Videos	5-26
K1,K2,S1, S2, C2	Euclid's First Four Postulates	Face-to-Face	Lectures, cooperative learning and discussion	5-26
K1, K2, K3, S1, S2, C2	Euclid's First Four Postulates	Face-to-Face	Lectures, cooperative learning and discussion	5-26
K1,K2, S1, S2, C1,	Euclid's First Four Postulates	Asynchronous	Self-reading, Videos and Assignment	5-26
K1, K2, S1, S2, C2	The Parallel Postulates	Face-to-Face	Lectures, cooperative learning and discussion	27-32
K1, K2, K3, S1, S2	The Parallel Postulates	Face-to-Face	Lectures, cooperative learning and discussion	33-42
K1, K2, S1, S2, C1	The Parallel Postulates	Asynchronous	Self-reading, Videos and Quiz	33-42
K1, K2, K3, S1, S2,	Triangles and congruence	Face-to-Face	Lectures, cooperative learning and discussion	33-42

	K1, K2, K3 S1, S2	Triangles and congruence	Face-to-Face	Lectures, cooperative learning and discussion	43-57
	K1, K2, K3, S1, S2, C1,	Triangles and congruence	Asynchronous	Self-reading, Videos	43-57
	K1, K2, K3, S1, S2	Polygons and related theorems	Face-to-Face	Lectures, cooperative learning and discussion	58-63
	K1, K2, K3, S1, S2	Polygons and related theorems	Face-to-Face	Lectures, cooperative learning and discussion	64-71
	K1, K2, S1, S2, C1	Polygons and related theorems	Asynchronous	Self-reading, Videos and Assignment	64-71
	K1, K2, K3, S1, C2,	Circles and related theorems	Face-to-Face	Lectures, cooperative learning and discussion	64-71
	K1, K2, S1, S2, C2,	Circles and related theorems	Face-to-Face	Lectures, cooperative learning and discussion	64-71
	K1, K2, S1, S2, C1	Circles and related theorems	Asynchronous	Self-reading, Videos and Quiz	
	K1, K2, K3, S1, S2	Circles and related theorems	Face-to-Face	Lectures, cooperative learning and discussion	72-80
	K2, K3, S1, S2, C2,	Circles and related theorems	Face-to-Face	Lectures, cooperative learning and discussion	72-80
	K2, K3, S1, S2, C1, C2	Circles and related theorems	Asynchronous	Self-reading, Videos	72-80
	K1, K2, K3, S1, S2, C2,	Areas of geometrical shapes	Face-to-Face	Lectures, cooperative learning and discussion	72-80
	K2, K3, S1, S2, C2,	Areas of geometrical shapes	Face-to-Face	Lectures, cooperative learning and discussion	72-80
	K2, K3, S1, S2, C1	Areas of geometrical shapes	Asynchronous	Self-reading, Videos and Assignment	81-96
	K1, K2, K3, S1, S2	Similarity	Face-to-Face	Lectures, cooperative learning and discussion	81-96
	K2, K3, S1, S2, S3, C2,	Similarity	Face-to-Face	Lectures, cooperative learning and discussion	81-96
	K2, S1, S2, S3, C1	Similarity	Asynchronous	Self-reading, Videos and Quiz	97-105
Mid-term exam					
	K2, S1, S2	Locus and constructions	Face-to-Face	Lectures, cooperative learning and discussion	97-105

	K2, K3, S1, S2, C1, C2	Locus and constructions	Asynchronous	Self-reading, Videos	106-120
	K1, K2, K3, S1, S2, C2	Analytic geometry	Face-to-Face	Lectures, cooperative learning and discussion	106-120
	K2, K3, S1, S2,, C2	Analytic geometry	Face-to-Face	Lectures, cooperative learning and discussion	106-120
	K2, K3, S1, S2, C1, C2	Analytic geometry	Asynchronous	Self-reading, Videos and Assignment	
	K1, K2, K3, S2, C2,	Inequalities and Indirect Reasoning	Face-to-Face	Lectures, cooperative learning and discussion	121-128
	K2, K3, S1, S2, C2	Inequalities and Indirect Reasoning	Face-to-Face	Lectures, cooperative learning and discussion	121-128
	K1, K2, S1, S2, C1	Inequalities and Indirect Reasoning	Asynchronous	Self reading, Videos and Quiz	129-152
	K2, K3, S1, S2, C2,	Inequalities and Indirect Reasoning	Face-to-Face	Lectures, cooperative learning and discussion	129-152
	K1, K2, S1, S2,	Inequalities and Indirect Reasoning	Face-to-Face	Lectures, cooperative learning and discussion	129-152
	K1, K2, K3, S1, S2, C1, C2	Extending Plane Geometry into Solid Geometry	Asynchronous	Self-reading, Videos	174-190
	K1, K2, K3, S1, S2, C2	Extending Plane Geometry into Solid Geometry	Face-to-Face	Lectures, cooperative learning and discussion	174-190
	K1, K2, K3, S1, S2, C2,	Extending Plane Geometry into Solid Geometry	Face-to-Face	Lectures, cooperative learning and discussion	174-190
	K1, K2, K3, S1, S2, C1, C2	Extending Plane Geometry into Solid Geometry	Asynchronous	Self reading, Videos and Assignment	
		Final Exams			

*Refer to document (   ) and page 2 in document (   )
** Refer to document (   )
**80% of the students must achieve the minimum acceptable percentage or higher for each CILO

Seventh: Assessment methods

Methods	Blended Learning	Specific Course Output to be measured *State the score identified for each CILO for each method of assessment out of 100 **If any CILO will not be assessed in the course, mark NA.						
		K1	K2	K3	S1	S2	C1	C2
Mid-term Exam	30	4	4	7	5	8	2	
Assignment	10				1	2	3	4
Quizzes	10	2	1	2	1	2	2	
Final Exam	50	4	5	11	9	16	5	
Total	100	10	10	20	16	28	12	4

Eighth: Course Polices

- All course policies are applied on all teaching patterns (online, blended, and face-to-face Learning) as follows:
  a. Punctuality.
  b. Participation and interaction.
  c. Attendance and exams.
- Academic integrity: (cheating and plagiarism are prohibited).