



Course Syllabus
According to JORDAN National Qualification
Framework (JNQF)

Course Name: Euclidean Geometry

Course Number: 0101231

General Course Information:

Course Title	Euclidean Geometry
Course Number	0101231
Credit Hours	3 credit hours
Education Type	Traditional learning
Prerequisites/Co-requisites	Foundations of Mathematics
Academic Program	Bachelor Program
Program Code	101
Faculty	Faculty of Science and IT
Department	Mathematics
Level of Course	2
Academic Year /Semester	2023/2024 1 st Semester
Awarded Qualification	Bachelor
Other Department(s) Involved in Teaching the Course	-
Language of Instruction	English
Date of Production	2021-2022
Date of Revision	16-10-2023

Course Coordinator:

Coordinator's Name	
Office No.	
Office Phone Extension Number	
Office Hours	
E-mail	

Other Instructors:

Instructor Name	
Office No.	
Office Phone Extension Number	
Office Hours	
Email	

Course Description (English/Arabic):

English	In this course students the basic concepts of Euclidean geometry they study: Postulates, The congruent concept, Isosceles triangles, Equilateral triangles, Other cases of congruent triangles, The parallel concept, The Euclidean parallel postulate, Parallelograms, Quadrilaterals, Similarity concept, The basic similarity theorems, Pythagoras theorem, The area postulate, Area of polygons, Equivalence of polygons, Circles.
Arabic	في هذا المنسق يدرس الطالب المفاهيم الأساسية للهندسة الأقليدية من خلال دراسة: المسلمات، مفهوم التطابق، مثلثات متساوية الأضلاع، مثلثات متساوية الساقين، حالات التطابق الأخرى للمثلثات، مفهوم التوازي، مسلمة التوازي، متوازي الأضلاع، الأشكال الرباعية الأخرى، مفهوم التشابه، نظريات تشابه المثلثات، نظرية فيثاغورس، مسلمة المساحة، مساحة المضلعات، تكافؤ المضلعات، مفاهيم أساسية في الدائرة.

Textbook: Author(s), Title, Publisher, Edition, Year, Book website.

Introduction to Geometry, Hassan Al-Zoubi, Dar Alam Al-Thaqafa 2014.

References: Author(s), Title, Publisher, Edition, Year, Book website.

- 1.- Elementary Geometry, Daniel C. Alexander, Geralyn M. Koeberlein, Fifth Edition, Brooks/Cole 2013
- 2.- Foundations of Geometry, Wylie, R. (2009), New York, Dover Publications, ISBN-10: 0486472140
- 3-Foundations of Geometry, -Venema, G. 2nd edition, UK, (2011), Pearson Education, ISBN-10: 0136020585.

Course Educational Objectives (CEOs):

CEO1	Develop a strong understanding of the fundamental principles and axioms of Euclidean geometry as presented in Euclid's "Elements."
CEO2	Learn to construct basic geometric figures using a straightedge and compass, including lines, angles, and polygons.
CEO3	Understand the properties of basic geometric shapes, such as points, lines, angles, triangles, quadrilaterals, and circles.

Intended Learning Outcomes (ILO's):

Intended learning outcomes (ILOs)		Relationship to CEOs	Contribution to PLOs	Bloom Taxonomy Levels*	JNQF Descriptors**
K	Knowledge and Understanding				
ILO1-k	Knowledge of the historical development of Euclidean geometry	CEO1	PLO1-k	Understanding	K
ILO2-k	The student's awareness of the difference between a postulate, theory and definition	CEO1	PLO1-k	Understanding	K
ILO3-k	The student's knowledge of basic theorems in the various topics of Euclidean geometry	CEO3	PLO1-k	Applying	K
S	Intellectual skills				
ILO4-s	Apply engineering models to solve various problems	CEO2	PLO5-s	Applying	S
C	Subject specific skills				
ILO5-c	Cooperate to work effectively in the group assignments.	CEO3	PLO11-c	Applying	C
D	Transferable skills:				
ILO6-d					

***Bloom Taxonomy Levels:**

Level #	1	2	3	4	5	6
Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

**** Descriptor (National Qualification Framework Descriptors): K: Knowledge, S: Skill, C: Competency.**

Program Learning Outcome (PLOs):

	(PLOs)	JNQF Descriptors**		
		K	S	C
1.	Knowledge of the main concepts in pure mathematics.	√		
2.	Knowledge of the main concepts in applied mathematics.	√		
3.	Explain concepts, principles and theories in the fields of probability and statistics.	√		
4.	Possession of technological culture related to the fields of mathematics and its applications.	√		
5.	Making use of mathematical logic in practical life.	√		
6.	Engaging scientific methodology as a way of thinking and as a tool in facing problems.		√	
7.	Applying mathematical software packages in problem solving.		√	
8.	Being capable of data analysis.		√	
9.	Capability of teaching according to modern educational techniques.		√	
10.	Develop creative and innovative methods of teaching mathematics.			√
11.	Showing the ability to work under ethical and professional standards within teams.			√
12.	Gaining critical thinking and scientific research skills.			√

** Descriptors according to the national qualifications framework (K: knowledge, S: skill, C: Competency)

Weekly Schedule (please choose the type of teaching)

- Face to Face (F2F)
- Hybrid (One – To - One)
- Online

Schedule of Simultaneous and their Topics:

Week	First Lecture (F2F)	Second Lecture (F2F)	ILOs	PLOs	JNQF Descriptors *
1	Distance postulate, Ruler postulate, Betweenness, line segmentsm Rays	Distance postulate, Ruler postulate, Betweenness, line segmentsm Rays	1	1	K
2	Line and plane in space, Angles, Triangles, Polygons	Line and plane in space, Angles, Triangles, Polygons	2	5	K
3	Congruence concepts, congruence postulate, Isosceles triangles, Equilateral triangles,	Congruence concepts, congruence postulate, Isosceles triangles, Equilateral triangles,	4	8	S
4	The theorem of exterior angle, inqualities of triangles	The theorem of exterior angle, inequalities of triangles	2	1	K

5	Other cases of congruent triangles	Other cases of congruent triangles	4	9	S
6	The parallel concept, The Euclidean parallel postulate	The parallel concept, The Euclidean parallel postulate	4	8	S
7	Parallelograms	Parallelograms	1	1	K
Midterm Exam (30%)					
9	Quadrilaterals	Back to triangles	2	7	K
10	Similar triangles and polygons, The basic similarity theorems	Similar triangles and polygons, The basic similarity theorems	4	8	S
11	Similarity of right triangles, Pythagoras theorem	Similarity of right triangles, Pythagoras theorem	4	9	S
12	The area postulate, Area and equivalent polygons,	The area postulate, Area and equivalent polygons	4	9	S
13	Circles, Arcs of circles	Circles, Arcs of circles	5	10	C
14	Tangents of a circle	Four sides circular polygon, Intersecting of two circles	5	1	C
15	Projects Discussion				
16	Final Exam				

* K: Knowledge, S: Skills, C: Competency

Teaching Methods and Assignments:

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

- Lecture.
- learning through projects.
- learning through problem solving.

Course Policies:

A- Attendance policies:

The maximum allowed absences is 15% of the lectures.

B- Absences from exams and handing in assignments on time:

Midterm exam can be retaken based on approval of excuse by the instructor's discretion.

Not handing assignment on time will incur penalties.

C- Academic Health and safety procedures

D- Honesty policy regarding cheating, plagiarism, and misbehaviour:

Cheating, plagiarism, misbehaviour will result in zero grade and further disciplinary actions may be taken.

E- Grading policy:

- All homework is to be posted online through the e-learning system.
- Exams will be marked within 72 hours and the marked exam papers will be handed to the students.
- Online Activities (Course Videos, Discussion Forums, Quizzes) **20%**
- Midterm 30%
- Final Exam 50%

F- Available university services that support achievement in the course: **E-Learning Platform, Labs, Library.**

Required Equipment:

- PC / Laptop with webcam and mic
- Internet Connection
- Access to the ZUJ E-Learning Platform at <https://exams.zuj.edu.jo/>
- E-learning plan

Assessment Tools Implemented in the Course:

- Final Exam
- Midterm Exam
- Quizzes
- Homework

Responsible Persons and their Signatures:

Course Coordinator	Waseem Almashaaleh	Completed Date	Oct / 2023
		Signature	
Received by (Department Head)		Received Date	/ /
		Signature	