



Detailed Course Description - Course Plan Development and Updating Procedures/ ..... Department	QFXX/0408-3.0E
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Faculty	Science and Information Technology	Department	Mathematics
Course number	0101331	Course title	Euclidean Geometry
Number of credit hours	3	Pre-requisite/co-requisite	none

**Brief course description** Axiomatic systems and modern axioms of Euclidean Geometry, Congruence of triangles, Parallelism and Parallelograms, Similarity, Area and Equivalent Polygons. The circle.

Course goals and learning outcomes	
<b>Goal 1</b>	Explore the content of Euclid's elements
Learning outcomes	1.1 Students will continue their professional growth with the community of mathematics educators. 1.2 Students will master the basic geometric concepts indicated in the topic list. 1.3 Students will improve their ability to talk about geometric objects using appropriate language.
<b>Goal 2</b>	Explore variations of Euclid's parallel postulate
Learning outcomes	2.1 Prove typical geometry proofs. (Pythagorean theorem, alternate interior angles, propositions in the Elements, etc.) 2.2 Students will be able to talk about their own geometric learning and use this understanding to analyze and expand their instructional strategies. 2.3 Students will develop the ability to reason about geometric objects.
<b>Goal 3</b>	Cite basic definitions.
Learning outcomes	3.1 Prove geometric theorems in non-Euclidean spaces (e.g. angle sum theorem on the sphere.) 3.2 Give the students a taste of some recent geometric discoveries 3.3 Provide students with a perspective meant to enhance their appreciations of axiomatic system
<b>Goal 4</b>	Give the students a taste of some recent geometric discoveries
Learning outcomes	4.1 Become better at reading and writing mathematical proofs. 4.2 Acquaint students with some of the geometry that was developed in the last two centuries 4.3 To provide prospective height school mathematics teachers with the geometric background they need.
<b>Textbook</b>	1.- Elementary Geometry, Daniel C. Alexander, Geralyn M. Koeberlein, Fifth Edition, Brooks/Cole 2013
<b>Supplementary references</b>	1- Moser, James M. Modern elementary geometry, Printice – Hall, New Jersey 1971 2. مقدمة في الهندسة، د. حسان محمود الزعبي، دار عالم الثقافة للنشر والتوزيع، الطبعة الأولى 2014 3.- "Foundations of Geometry" by C.R. Wylie, JR. McGraw-Hill Company 1995



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Course timeline				
Week	Number of hours	Course topics	Pages (textbook)	Notes
01	1 1 1	Introduction to Euclidean Geometry – The axiomatic method.	1 – 38	
02	1 1 1	line segments and rays. Angles. Triangles and Polygons.	39 – 60	
03	1 1 1	The Congruent postulate of Triangles. Isosceles triangles, equilateral triangles.	61 – 102	
04	1 1 1	Other cases of congruent triangles. The parallel concept. The Euclidean parallel postulate.	102 – 117	
05	1 1 1	Parallelograms, Quadrilaterals.	117 – 133	
06	1 1 1	Some Properties of Triangles. <b>First Exam: 20%</b>	133 – 151	
07	1 1 1	Similar Triangles and Polygons. The basic similarity theorems.	152 – 179	
08	1 1 1	Pythagoras Theorem. The area postulate.	180 – 205	
09	1 1 1	Area and Equivalent Polygons. Ceva's Theorem.	205 – 212	
10	1 1 1	Equivalence of polygons. Circles.	212 – 230	
11	1 1 1	Arcs of circles. Inscribed and central angles.	231 – 251	
12	1 1 1	Tangents of a circle. <b>Second Exam: 20%</b>	251 – 261	
13	1 1 1	Four Sides Circular Polygon. Intersecting of two circles	261 – 282	
14	1 1 1	Volumes Definition of Prism, Pyramid, Cylinder, Cone Volumes of Prism, Pyramid, Cylinder, Cone Surface Area of Prism, Pyramid, Cylinder, Cone	404 – 413	



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15	1 1 1	Sphere. <b>Review of course material</b>	414 – 424	
16	1 1 1	<b>Final Exam: 50%</b>		

<b>Theoretical course evaluation methods and weight</b>	Participation = 10% First exam 20% Second exam 20% Final exam 50%	<b>Practical (clinical) course evaluation methods</b>	Semester students' work = 50% (Reports, research, quizzes, etc.) Final exam = 50%
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Approved by head of department		Date of approval	
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Extra information (to be updated every semester by corresponding faculty member)

Name of teacher		Office Number	
Phone number (extension)		Email	<a href="mailto:_____@zug.edu.jo">_____@zug.edu.jo</a>
Office hours			