

AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title	Basic Concepts in Geometry							
Course Code	MTE524		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit 8	Workload	200 (Hours)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course	To provide stu properties of p	dents to exar lane figures	nine all axio	matic natu	re of geometry	and enable	them to comprehe	nd the
Course Content	Definition of geometry, structure of geometry and geometry usage in real life. Explaining the undefined concept and theorem. Euclidean and non-Euclidean geometries, the basic axiom Euclidean geometry. The relationships among points, line and plane concepts. The concept types of angle, equivalence of angle and equivalence axioms, applications related to angles definition of the concept of polygon. The definition of triangle, types of triangle, basic and as elements of triangle, equivalence axioms and theorems related to triangles, applications related to sim triangles. To prove the theorems of some geometric concepts such as trapezoid, parallelogy equilateral quadrilateral, rectangle, square, deltoid. Applications related to quadrilaterals. The circle, theorems and proofs related to angle and length in circle, applications related to angle in circle. The properties of objects in space.					e. Explaining the axies basic axioms of a basic axioms of a lated to angles. The concept of a lated to angles. The basic and assistant pplications related to similarity oid, parallelogram, adrilaterals. The correlated to angle any colume of solid obj	kiom, angle, le ant to ty in poncept of id length ects	
Work Placement	N/A							
Planned Learning Activities and Teaching Methods			Explanatio	n (Presenta	ation), Discussi	on, Individua	al Study, Problem	Solving
Name of Lecturer(s) Lec. Serhan ULUSAN								

Assessment Methods and Criteria						
Method		Quantity	Percentage (%)			
Midterm Examination		1	30			
Final Examination		1	70			

Recommended or Required Reading

1	Atatürk, M.K. (1937) Geometri, Türk Dil Kurumu Yayınları, Ankara
2	Stakkestad J.M., Wyant L. (1986) Introduction to Geometry, Academic Press, Orlando
3	Tapan-Broutin, M.S. (2010) Bilgisayar Etkileşimli Geometri Öğretimi, Ezgi Kitabevi Yayınları

Week	Weekly Detailed Course Contents					
1	Theoretical	Definition of geometry, structure of geometry and geometry usage in real life. Explain axiom, undefined concept, theorem. Euclidean and non-Euclidean geometries, basic axioms of Euclidean geometry. The relationships between concept of point, line and plane				
2	Theoretical	The concept of angle, types of angle, equivalence of angle and equivalence axioms, applications related to angles				
3	Theoretical	Definition of triangle concept, , types of triangles, basic and assistant elements of triangle, equivalence axioms and theorems related to triangles, applications related to equivalences in triangles				
4	Theoretical	Basic theorems and applcations related isosceles triangle, equilateral triangle, right-angled triangle				
5	Theoretical	Similar triangles, similarity theorems, applications about similarity on triangles, metric relations on right-angled triangle				
6	Theoretical	I., II. Thales Theorems, bisector theorem, Menelaus Theorem, Ceva Theorem				
7	Theoretical	Definition of poligon concept, proof of related theorems as on quadrangle, parallelogram, equilateral quadrangle, rectangle, square, deltoid, trapezoid, isosceles trapezoid				
8	Theoretical	Applications related quadrangles. (Midterm exam)				
9	Theoretical	Concepts of circle and disk, angle, arc, chord, tangent, theorems and proofs related length on circle and disk, applications related angle and length on circle and disk				
10	Theoretical	Inscribed quadrilateral, calculation on length of circle and arc, tangent quadrangle, common tangent of two circle, power of point according to circle, concept of geometrical place, basic drawings (as drawing triangle given some elements)				
11	Theoretical	Areas of polygonal regions, areas of polygons, areas of regular polygons, calculations on disk, properties of matters in space, solid matter, prisms, right and oblique prisms				
12	Theoretical	Areas and volumes of prisms, pyramids, areas and volumes of pyramids, applications related prisms and pyramids				
13	Theoretical	Conic, area and volume of conic, cutting pyramids, area and volumes of cutting pyramids, applications related conic and cutting pyramids				



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Theoretical

Sphere, slice of sphere, concept of sphere cover, their area and volumes, applications related sphere

Workload Calculation

workload Calculation					
Activity	Quantity		Preparation	Duration	Total Workload
Lecture - Theory	14		2	3	70
Individual Work	14		0	3	42
Midterm Examination	1		36	2	38
Final Examination	1		48	2	50
	200				
	8				

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	Explain and apply definition of geometry, its structure and geometry usage in real life
2	Solve problems related definition of triangle concept, kinds of triangles, basic and assistant elements of triangle, equivalence axioms and theorems about triangles, applications related to equivalences in triangles
3	Solve problems related similar triangles, similarity theorems, applications about similarity on triangles
4	Express relations between concepts of line, plane and point
5	Explain concepts of angle, polygon, triangle, disk and their applications
6	Explain the properties of objects in space, applications related to area and volume of solid objects

Programme Outcomes (Mathematics Education Master)

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1	Learns sufficient theoretical knowledge in the field of mathematics education
2	Uses theoretical knowledge in educational settings
3	Integrates mathematics education knowledge with the other disciplines and products functional knowledge
4	Uses information and communication technologies efficiently in conceptual learning
5	Finds scientific solutions to the problems in the field of mathematics education
6	Evaluates the knowledge critically in the field
7	Participates team projects in the mathematics education field
8	Shares national and international data in the field of mathematics education
9	Comprehends and evaluates science-technology-society and mathematics interactions
10	Comprehends mathematics under the ethical values and takes account of ethical considerations
11	Follows the current development in the mathematics education field
12	Develops strategical plans and evaluates them in the context of quality processes
13	Adopts lifelong learning strategies to his/her studies

Contribution of Learning Outcomes to Programme Outcomes 1: Very Low, 2: Low, 3: Medium, 4: High, 5: Very High

	L1	L2	L3	L4	L5	L6
P1	4	3	2	2	2	3
P2	2	1	1	1	2	2
P3	3	1	2	1	1	1
P5	2	3	3	4	2	3
P6	3	2	1	1	2	3
P9	1	1	1	1	1	1
P13	1	1	1	1	1	1

