



T.C.

ESKİŞEHİR OSMANGAZİ ÜNİVERSİTESİ

FACULTY OF SCIENCES

MATHEMATICS AND COMPUTER SCIENCES DEPARTMENT



## COURSE INFORMATION FORM

Course Name	Course Code
Computer Graphics	821618010

Semester	Number of Course Hours per Week		Credit	ECTS
	Theory	Practice		
8	3	0		5

Course Category (Credit)				
Basic Sciences	Engineering Sciences	Design	General Education	Social
x				

Course Language	Course Level	Course Type
Turkish	Undergraduate	Elective

<b>Prerequisite(s) if any</b>	
<b>Objectives of the Course</b>	Students will understand geometric problems and computer graphics algorithms, Will be able to follow the developments in the field of computer graphics, Gain experience on computer graphic geographic information systems.
<b>Short Course Content</b>	Concepts of computer graphics and it's techniques, plane scan algorithms, Convex hulls, map overlay, art gallery problem, triangulation of a polygon, casting problem, Orthogonal Range Searching, Point Location, Voronoi diagramları

Learning Outcomes of the Course	Contributed PO(s)	Teaching Methods *	Measuring Methods **
1 Being able to recognize and understand geometric algorithms in encountered problems	1,2,3	1,2,5	A,D
2 Teach thinking with transformations in geometry.	1,2,4	1,2,5	A,D
3 Develops ability to analyze and solve problems encountered	3,4,5,9	2,10,12	A,D
4 Analytical thinking skills develop and the ability to make individual and independent decisions develops.	3,4,5,9	10,11	A,D
5 The ability to analyze and interpret data, apply interpretation to other data, and apply this information in a computer environment develops.	13	10,11,13	A,D
6			
7			
8			

\*Teaching Methods 1:Expression, 2:Discussion, 3:Experiment, 4:Simulation, 5:Question-Answer, 6:Tutorial, 7:Observation, 8:Case Study, 9:Technical Visit, 10:Trouble/Problem Solving, 11:Individual Work, 12:Team/Group Work, 13:Brain Storm, 14:Project Design / Management, 15:Report Preparation and/or Presentation

\*\*Measuring Methods A:Exam, B:Quiz, C:Oral Exam, D:Homework, E:Report, F:Article Examination, G:Presentation, I:Experimental Skill, J:Project Observation, K:Class Attendance; L:Jury Exam

<b>Main Textbook</b>	<b>Computational Geometry, Mark de Berg, Marc van Kreveld, Mark Overmars, Otfried Schwarzkopf, Springer</b>
<b>Supporting References</b>	<b>Introduction to Data Structures, Bhagat Singh, Thomas L. Naps, West</b>
<b>Necessary Course Material</b>	

<b>Course Schedule</b>	
<b>1</b>	Introduction to Computer graphic
<b>2</b>	Convex hulls
<b>3</b>	Network type map overlay
<b>4</b>	Planar region map overlay
<b>5</b>	Art galery problem
<b>6</b>	Polygon triangulation
<b>7</b>	Molding problem
<b>8</b>	Mid-Term Exam
<b>9</b>	Linear programming
<b>10</b>	Smallest Enclosing Discs
<b>11</b>	Orthogonal range searching
<b>12</b>	Point Location
<b>13</b>	Point Location
<b>14</b>	Voronoi Diagrams
<b>15</b>	Voronoi Diagrams
<b>16,17</b>	Final Exam

<b>Calculation of Course Workload</b>			
<b>Activities</b>	<b>Number</b>	<b>Time (Hour)</b>	<b>Total Workload (Hour)</b>
Course Time (number of course hours per week)	14	3	42
Classroom Studying Time (review, reinforcing, prestudy,...)	14	3	42
Homework			
Quiz Exam			
Studying for Quiz Exam			
Oral exam			
Studying for Oral Exam			
Report (Preparation and presentation time included)			
Project (Preparation and presentation time included)			
Presentation (Preparation time included)			
Mid-Term Exam	1	2	2
Studying for Mid-Term Exam	1	30	30
Final Exam	1	2	2
Studying for Final Exam	1	35	35
	<b>Total workload</b>		<b>153</b>
	<b>Total workload / 30</b>		<b>153/30</b>
	<b>Course ECTS Credit</b>		<b>5</b>

Evaluation	
Activity Type	%
Mid-term	40
Bir öge seçin.	
Bir öge seçin.	
Final Exam	60
<b>Total</b>	<b>100</b>

RELATIONSHIP BETWEEN THE COURSE LEARNING OUTCOMES AND THE PROGRAM OUTCOMES (PO) (5: Very high, 4: High, 3: Middle, 2: Low, 1: Very low)		
NO	PROGRAM OUTCOME	Contribution
1	The ability to apply knowledges of Mathematics and Computer Sciences,	4
2	To have sufficient theoretical and practical knowledge of Mathematics at international level,	5
3	The ability of describing, modelling and solving of mathematical problems at Mathematics and related subjects,	5
4	The skill to solve and design a problem process in accordance with a defined target,	5
5	Skills to analyze data, interpret and apply to other datum and using these data on computer,	4
6	The skill to use the modern techniques and computational tools needed for mathematical applications,	4
7	The skill to make team work within the discipline and interdisciplinary,	3
8	The ability to improve oneself by following the developments on other modern, scientific and technological subjects as well as Mathematics and Computer Sciences,	4
9	The skill to communicate orally and in written way, in a clear and concise manner by having individual work skills and ability to independently decide and analytical thinking,	4
10	The skill to have professional and ethical responsibility,	4
11	The skill to have consciousness for quality issues and scientific research,	2
12	The skill to be sensitive to environmental issues related with problems and development of living area and consistent in the social relations,	1
13	Ability to solve problems in the working life faced to find an appropriate algoritms via mathematical modeling and to write computer programs,	4
14	The skill to developed design of software systems at different complex levels,	1
15	The credence of necessity of life-long learning and ability to apply the formation long-life learning.	2

LECTUTER(S)				
Prepared by	Prof. Dr. Özcan Gelişgen			
Signature(s)				

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