

Course Description	
Course Code	YS 411
Course Name	COMPUTER GRAPHICS
Prerequisite Courses	
Language of the Course	The English
Course Coordinator	
Instructor(s)	
Course Assistants	
The aim of the course	In this course, we aim to help the students develop some facilities in the use of graphics editing software and graphics creation software. The course will cover the basic concepts in computer graphics.
Course Content	Points and Lines. 2 dimensional and 3-dimensional transformations and projections. Plane curves. Space Curves. Surface description and generation. Graphic and animation applications using OPENGL software.

Weekly Course Content	
Week 1	Points and Lines
Week 2	3-dimensional transformations and projections.
Week 3	Plane curves.
Week 4	Space Curves, Cubic Splines.
Week 5	Space Curves, Bezier Curves.
Week 6	Space Curves, B-Spline Bezier Curves.
Week 7	Surface description and generation.
Week 8	Midterm Exam
Week 9	Introduction to OPENGL.
Week 10	Drawing Geometric Objects using OPENGL.
Week 11	2-dimensional transformations using OPENGL.
Week12	3-dimensional transformations using OPENGL.
Week 13	Color and shading method using OPENGL.
Week 14	Lighting in OPENGL, Texture Mapping using OPENGL.
Week 15	Final exam.

Course Learning Outcomes	
1	The teaching of the basic concepts of computer graphics.
2	The teaching of two-dimensional transformation methods
3	The teaching of three-dimensional transformation methods
4	The teaching of plane and space curves
5	The teaching of surface description and generation
6	Ability to create basic applications using OPENGL software

Contribution of the Course to Program Qualifications		Contribution Level
01	The student will have the ability to apply analytical approach, mathematics and science knowledge in software and engineering issues.	3
02	The student will have the ability to identify, define, formulate and solve a problem in software and computer systems.	3
03	The student will have gains scientific research skills in software and engineering problems, has the ability to design a system, part or process.	4
04	The student will have the ability to use the design capability, techniques and tools required for engineering applications.	3
05	The student will have the ability to design, implement and interpret experimental work and software projects by analyzing the results.	3
06	The student will have the ability to work between disciplines and teamwork.	4
07	The student will have the ability to work in international environments and adapt to different cultures.	4
08	The student will have verbal and written communication skills in Turkish and English.	4
09	The student will have the awareness of the necessity of lifelong learning and the ability to realize it.	5
10	The student will gain knowledge of legal issues with the awareness of professional and ethical responsibility.	2
11	The student will have managerial skills (leadership, organization, time and risk management, quality awareness, efficiency, etc.).	2
12	The student will have the ability to participate in social activities, to acquire regular sports habits and to use time in the best way.	4
13	The student will have the ability to find unusual ways and produce projects.	4
14	The student will have professional self-confidence, being an entrepreneur and taking initiative.	4
15	It is sensitive about the problems of the age and looks after the national interests.	3

ECTS WORKLOAD			
	Number	Duration (hours)	Number*Duration
Face to face education	14	2	28
Out-of-class study time (pre-study, reinforcement)	10	2	20
Homeworks	3	5	15
Presentation / Seminar preparation	0	0	0
Quizzes	0	0	0
Preparation for midterm exams	1	5	5
midterm exams	1	2	2
Project (Semester assignment)	0	0	0
Lab	5	3	15
field work	0	0	0
Preparation for the final exam	1	8	8
Semester final exam	1	2	2
Research	0	0	0
TOTAL WORKLOAD			95
ECTS			3

Evaluation		
SEMESTER EVALUATION	Number	Contribution

		Percentage
Midterm	1	20
Quiz	0	0
Homework	3	20
SEMESTER TOTAL		40
Contribution rate of mid-term evaluations to success		40
Contribution rate of the final exam to success		60
GRAND TOTAL		100

RESOURCES	
Textbook	Mathematical Elements for Computer Graphics David F. Rogers, J. Alan Adams, OpenGL Programming Guide
Helpful Resources	Computer Graphics:Principles and Practice in C, Addison-WesleyFoley, J. D., Dam, A., Feiner, S. K., Hughes, J. F., Geometric Tools for Computer Graphics, Morgan Kaufmann, Schneider, P., Eberly, D. DComer, D.E.