

Course Description Form	
Course Code and Name	CENG492 COMPUTER GRAPHICS (TECH.ELECT.)
Course Semester	8
Catalog Content	Basic concepts, Interactive graphics programming basics, Graphics hardware, point and line drawing mechanisms, Raster systems, 2-D and 3-D geometry, matrix transformations, the representation of curves and surfaces, a rigid body modeling, coloring, Can Appear determination of surface and lighting, Shading and lighting models, Three-dimensional imaging, Graphics file formats, Computer animation, Color models, User interactive design, OpenGL and computer applications
Textbook	Computer Graphics with OpenGL (3rd Edition) by Donald Hearn and M. Pauline Baker, 2003.
Supplementary Textbooks	Interactive Computer Graphics: A Top-Down Approach with WebGL 7th Edition by Edward Angel, 2014. WebGL Programming Guide: Interactive 3D Graphics Programming with WebGL (OpenGL) 1st Edition by Kouichi Matsuda (Author), Rodger Lea, 2013.
Credit	6
Prerequisites of the Course (Attendance Requirements)	There is no prerequisite or co-requisite for this course.
Type of the Course	Elective
Instruction Language	English
Course Objectives	To teach the fundamentals of computer graphics, graphic modeling and design
Course Learning Outcomes	1. Giving computers a visual understanding of the world and process and provide useful results based on the observation
Instruction Methods	The mode of delivery of this course is face to face.

<p>Weekly Schedule</p>	<ol style="list-style-type: none"> 1. Week: Basic concepts, 2. Week: Interactive graphics programming basics, 3. Week: Graphics hardware, point and line drawing mechanisms, 4. Week: Raster systems, 5. Week: 2-D and 3-D geometry, matrix transformations, the representation of curves and surfaces, 6. Week: rigid body modeling, coloring, 7. Week: Can Appear determination of surface and lighting, 8. Week: Shading and lighting models 9. Week: Three-dimensional imaging 10. Week: Graphics file formats 11. Week: Computer animation, 12. Week: Color models 13. Week: User interactive design 14. Week: OpenGL and computer applications 			
<p>Teaching and Learning Methods</p> <p><i>(These are examples. Please fill which activities you use in the course)</i></p>	<p>Weekly theoretical course hours: 3 Reading Activities Internet browsing, library work Designing and implementing materials Preparation of Midterm and Midterm Exam Final Exam and Preparation for Final Exam</p>			
<p>Assessment Criteria</p>		<p>Numbers</p>	<p>Total Weighting (%)</p>	
	Midterm Exams	1	30	
	Assignment	2	10	
	Application			
	Projects	1	20	
	Practice			
	Quiz			
	Percent of In-term Studies (%)		60	
	Percentage of Final Exam to Total Score (%)		40	
	Attendance			

Workload	Activity	Total Number of Weeks	Duration (weekly hour)	Total Period Work Load			
	Weekly Theoretical Course Hours	14	3	42			
	Weekly Tutorial Hours						
	Reading Tasks	10	3	30			
	Studies	10	3	30			
	Material Design and Implementation	4	5	20			
	Report Preparing						
	Preparing a Presentation						
	Presentations						
	Midterm Exam and Preparation for Midterm Exam	1	13	13			
	Final Exam and Preparation for Final Exam	1	15	15			
	Other (should be emphasized)						
	Total Workload			150			
	Total Workload / 25			6			
	Course Credit (ECTS)			6			
Contribution Level Between Course Learning Outcomes and Program Outcomes	No	Program Outcomes	1	2	3	4	5
	1	Sufficient knowledge on mathematics, science and computer engineering; ability to apply theoretical and practical knowledge in these areas to model and solve engineering problems					X
	2	Ability to identify, define, formulate and solve complex engineering problems; ability to choose and apply appropriate analysis and modelling methods for these purposes				X	
	3	Ability to design a complex system, process, device, software, algorithm, or product under realistic constraints and circumstances to meet certain requirements; ability to apply modern design techniques for this purpose			X		
	4	Ability to choose, develop and use modern techniques and tools necessary for engineering applications; ability to effectively use computing technologies			X		
	5	Ability to design and implement systems or experiments to solve engineering problems, collect and interpret data to evaluate and analyze the results of solutions				X	
	6	Ability to work effectively in intradisciplinary and interdisciplinary teams or individually		X			
	7	Ability to efficiently prepare, evaluate and interpret reports				X	
	8	Ability to make presentations and conduct effective verbal and written communication in Turkish and English		X			
	9	Awareness of the necessity of lifelong learning; ability to access information, follow scientific and technological developments; ability to perpetually renew oneself					X
	10	Awareness of professional and ethical responsibility, ability to act in accordance with ethical principles	X				

	11	Ability to apply knowledge on project management, risk management and change management	X					
	12	Awareness of entrepreneurship and innovation, ability to design and build sustainable systems			X			
	13	Ability to devise local and global solutions to contemporary issues considering the effects of engineering applications on health, environment and security		X				
	14	Awareness of the legal consequences of engineering solutions	X					
	15	Ability to apply knowledge on software development process and documentation rules			X			
	16	Knowledge on standards used in engineering applications			X			
	17	Awareness of occupational health and security, information security and privacy	X					
The Course's Lecturer(s) and Contact Information		Assoc. Prof. Dr. Murat Hacıömeroğlu murath@gazi.edu.tr						