COMPUTER GRAPHICS										
1	Course Title:	COMPU	COMPUTER GRAPHICS							
2	Course Code:	BMB3022								
3	Type of Course:	Optional								
4	Level of Course:	First Cyc	cle							
5	Year of Study:	3								
6	Semester:	6								
7	ECTS Credits Allocated:	5.00								
8	Theoretical (hour/week):	3.00								
9	Practice (hour/week):	0.00								
10	Laboratory (hour/week):	0								
11	Prerequisites:	None								
12	Language:	Turkish								
13	Mode of Delivery:	Face to face								
14	Course Coordinator:	Dr. Ögr. Üyesi CEYDA NUR ÖZTÜRK								
15	Course Lecturers:									
16	Contact information of the Course Coordinator:	ceydanur@uludag.edu.tr								
17	Website:									
18	Objective of the Course:	To examine viewing procedures in two dimensions and three dimensions from modelling coordinates to device coordinates, and teach representations, techniques, and algorithms that are used in these procedures with weekly OpenGL applications.								
19	Contribution of the Course to Professional Development:	Develops different points of view and programming skills concerning rendering process from computer representations to realistic images.								
20	Learning Outcomes:									
		1	Being able to produce two dimensional and three dimensional renderings using graphics primitives							
		2	Knowing polygon processing and drawing algorithms that work in raster area							
		3	Being able to use representations that are based on meshes, Bézier curves, or B-splines							
		4	Being able to design applications that involve interaction and animation							
		5	Being able to apply simple and combined geometric transformations to the object models							
		6	Being able to mathematically describe the transformations between different coordinate systems							
		7	Being able to use realistic rendering techniques such as texturing and illumination							
		8	Having knowledge about ray tracing and visible surface detection algorithms							
		9	Having working principles of OpenGL library mastered							
		10								
21	Course Content:	Course Content:								
	Course Content:									
Week	Theoretical		Practice							

1	Survey of computer graphics, graphic hardware and software, introduction OpenGL	cs to								
2	Graphics output primitives: point, line triangle, circle, and polygon; polygon	, fill areas								
3	Attributes of graphics primitives: colo blending, colour models, pattern fillin	buring, g								
4	OpenGL rendering pipeline, mouse a keyboard interactions, animation	Ind								
5	Splines: continuity conditions and representations; Bézier curves, B-spl	ines								
6	Drawing algorithms: digital differentia analysis and Bresenham line drawing algorithms, midpoint circle and ellipse drawing algorithms									
7	Two dimensional transformations: tra rotation about a point, scaling, and sl	nslation, nearing								
8	Two dimensional viewing procedures and viewport windows, line and polyg clipping algorithms	, clipping jon								
9	Three dimensional transformations: translation, rotation about a general a	axis,								
Activit	es		Number	mber Duration (hour						
Theore	tical		14	3.00	42.00					
Practic	als/Labs		0	0.00	0.00					
Self stu	dy and preperation		14	2.00	28.00					
Homew	vorks		6	4.00	24.00					
Project	Global illumination and ray tracing m	ethode	1	30.00	30.00					
Field S	tudies		0	0.00	0.00					
Mi da ern	OppernOsL shading language		1	12.00	12.00					
Others			0	0.00	0.00					
Fi 22 E	Kpextbooks, References and/or Other		1. Hearn, D. D., Bake	.,128000.						
Total W	Vork Load		,		154.00					
Total w	ork load/ 30 hr		2. Vries, J. d., 2020.	Learn OpenGL, Kenda	158137Velling,					
ECTS	Credit of the Course				5.00					
			 Hugnes, J. F., Van Dam, A., McGuire, M., Sklar, D. F., Foley, J. D., Feiner, S. K., Akeley, K., 2014. Computer Graphics Principles and Practice, Addison-Wesley Professional, 3rd Edition, ISBN: 9353068967. Shirley, P., Marschner, S., et al., 2009, Fundamentals of Computer Graphics, CRC Press, 4th Edition, ISBN: 978- 1482229394. 							
23	Assesment									
TERML	EARNING ACTIVITIES	NUMBE R	WEIGHT							
Midtern	n Exam	1	10.00							
Quiz		0	0.00							
Home v	work-project	6	30.00							
		1	60.00							

Total 8							100	100.00								
Contribution of Term (Year) Learning Activities to Success Grade						40.	40.00									
Contribution of Final Exam to Success Grade							60.	60.00								
Total							100	100.00								
Measurement and Evaluation Techniques Used in the Course						ne pro	programming assignments, written exams, project									
24 ECTS / WORK LOAD TABLE																
25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16
ÖK1	4	3	4	4	3	3	3	0	3	2	0	0	0	0	0	0
ÖK2	5	2	1	3	1	1	1	0	1	0	0	0	0	0	0	0
ÖK3	4	5	3	3	2	2	1	0	2	0	0	0	0	0	0	0
ÖK4	4	4	3	4	2	3	2	0	2	1	0	0	0	0	0	0
ÖK5	5	5	2	3	2	3	2	0	1	1	0	0	0	0	0	0
ÖK6	5	5	2	3	1	2	1	0	1	0	0	0	0	0	0	0
ÖK7	3	4	4	4	2	3	2	0	2	1	0	0	0	0	0	0
ÖK8	5	4	3	4	1	1	1	0	2	0	0	0	0	0	0	0
ÖK9	5	2	5	5	2	3	3	3	3	2	2	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contrib ution Level:	1 \	1 very low 2 low			3	3 Medium		4 High		5 Very High						