COURSE DESCRIPTION FORM	
Course Code and Name	BM447 GAME DEVELOPMENT (TECH.ELECT.)
Course Semester	7
Catalogue Data of the Course (*Course Content*)	Introduction of game engine, scene creation, player characters, visualization, importing 3D models into game engine, using prefabs, scripting, UI creation, timing, rigid bodies, physics, particle systems, game building and distribution
Course Textbooks	1. Unity Game Development in 24 Hours, 4th Edition, Mike Geig, Sams Publishing, 2021
Supplementary Textbooks	1. Unity in Action, Third Edition: Multiplatform game development in C#, 3rd Edition, Joe Hocking, Manning, 2022
Credit (*ECTS*)	6
Prerequisites for the Course (*Attendance Requirements*)	There is no prerequisite or co-requisite for this course.
Course Type	Technical Elective
Language of Instruction	Turkish
Course Objectives	To teach about game engine workspace, traditional game project workflow, how to create and optimize game world.
Course Learning Outcomes	1. Conveys information about what game development is and how to do it using a game engine. 2. Conveys information about game engine concepts, working environment and traditional project flow. 3. Creates games using game engine.
Instruction Method (*Face-to-face, Distance education etc.*)	The mode of delivery of this course is face to face
Weekly Schedule of the Course	Week 1: Game engine environment and UI Week 2: Camera features and visualization Week 3: User interactions Week 4: Scripting Week 5: Player characters Week 6: Prefab and instantiation Week 7: Rigid bodies Week 8: Ray tracing, colliders, collision detection Week 9: Terrain editor Week 10: Particle systems Week 11: Importing 3D models into game engine Week 12: Animated characters Week 13: Menu design Week 14: Building and distributing games
Teaching Activities (*The time spent for the activities listed here will determine the amount of credit required*)	Weekly theoretical course hours: 3 Reading activities Internet search and library work Designing and implementing materials Midterm and revision for midterm Final exam and revision for final exam

		Number(s)	Weight (%)
Assessment Criteria	Midterm exam	1	30
	Assignment	3	30
	Application	0	0
	Project	0	0
	Practice	0	0

	Quiz	0	0
	Final exam	1	40
	Total	5	100

	Activity	Number of Weeks	Duration (Weekly Hour)	End of Semester Total Workload
Workload of the Course	Weekly theoretical course hours	14	3	42
	Weekly practical course hours	0	0	0
	Reading activities	11	3	33
	Internet search and library work	11	3	33
	Designing and implementing materials	3	6	18
	Making a report	0	0	0
	Preparing and making presentations	0	0	0
	Midterm and revision for midterm	1	10	10
	Final exam and revision for final exam	1	14	14
	Total workload			150
	Total workload/ 25			6
	Course Credit (ECTS)			6

	No	Program Outcomes	1	2	3	4	5
Contribution Level between Course Outcomes and Program Outcomes	1	Knowledge of mathematics, science, basic engineering, computing, and computer engineering; ability to use this knowledge in solving complex engineering problems.					X
	2	Ability to define, formulate and analyze complex engineering problems using basic science, mathematics and engineering knowledge and considering the UN Sustainable Development Goals relevant to the problems addressed.				X	
	3	Ability to design creative solutions to complex engineering problems; ability to design complex systems, processes, devices, software, algorithms or products to meet current and future requirements, considering realistic constraints and conditions.			X		
	4	Ability to select, use and develop appropriate techniques, resources and modern engineering and informatics tools, including estimation and modeling, for the analysis and solution of complex engineering problems while being aware of their limitations.				X	
	5	Ability to use research methods to examine complex engineering problems or research topics in computer engineering, including reviewing the literature, designing experiments, conducting experiments, collecting data, analyzing and interpreting results.			X		
	6	Knowledge of the effects of engineering practices and the standards used in these practices on society, health and safety, economy, sustainability and environment within the scope of the UN Sustainable Development Goals; awareness of the consequences of engineering solutions in the fields of information security and law.		X			
	7	Acting in accordance with engineering professional principles and knowledge on		X			

			1	2	3	4	5
		ethical responsibility; awareness of acting impartially, without discrimination on any issue, and being inclusive of diversity.					
	8	Ability to work effectively individually and as a team member or leader in intradisciplinary and multidisciplinary teams (face-to-face, remote, or hybrid).		X			
	9	Ability to conduct effective verbal and written communication on technical issues in Turkish or English, prepare reports, make effective presentations and prepare software documentation, considering the various differences of the target audience (such as education, language, profession).					
	10	Knowledge of business practices such as project, risk and change management and economic feasibility analysis; awareness of entrepreneurship and innovation.					
	11	Lifelong learning skill that includes the ability to learn independently and continuously, to adapt to new and developing scientific practices and technologies, and to think inquisitively about technological changes.				X	
Lecturer(s) and Contact Information	Assist. Prof. Dr. Öner BARUT onerbarut@gazi.edu.tr						