

COURSE SYLLABUS

Course Title	Course Code	Semester	Course Hour/Week		Credit	ECTS
Game Coding II	GAME304	6	Theory 2	Practice 2	3	5
Course Type	Compulsory Course	Department Elective	Faculty Elective	University Elective	CoHE (YÖK) Elective	Other
	Yes					
Level of Course	Associate Degree (Short Cycle)		Undergraduate (First Cycle)		Graduate/ Doctoral (Second /Third Cycle)	
	-		Yes		-	

Language of Instruction	English
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Course Instructor(s)	Dr. Masoud Moradi	E-mail : masoud.moradi@arucad.edu.tr Office : TI-OFF18
Course Objectives	<p>This course aims to extend students' C# and Unity skills beyond Game Coding I by focusing on:</p> <ul style="list-style-type: none"> • Iteration (for/foreach/while) and gameplay loops Chamillard C# Unity • Class design and implementation (fields, properties, constructors, methods) • Unity UI text input/output and basic UI-driven interaction • Unity audio integration and scripting audio playback • Object-oriented programming: inheritance and polymorphism in game code • Event-driven programming using delegates/events/UnityEvent for menus and gameplay systems • Robust coding: exception handling and safer runtime behaviour • Data persistence: File I/O, PlayerPrefs, and simple configuration/high-score storage • Building a complete, playable Unity game prototype by applying an iterative problem-solving workflow 	

Course Learning Outcomes	Students will able to:	Teaching Methods	Evaluation Methods
	Use iteration effectively (for/foreach/while) to implement gameplay systems such as spawning, waves, and timers.	- Lectures - In-class coding exercises	- Midterm Exam - Assignment
	Design and implement clean classes using fields, properties, constructors, and well-structured methods	- Lectures - Practice labs - Small projects	- Midterm Exam - Final Exam - Assignment
	Build UI-driven features such as displaying text, reading player text input, and connecting UI to gameplay..	- Lectures - Lab sessions - Guided coding tasks	- Midterm Exam - Final Exam
	Apply OOP (inheritance/polymorphism) to create scalable code structures for characters/enemies/items.	- Lectures - Exercises	- Midterm Exam - Final Exam
	Deliver a complete Unity game prototype that includes gameplay loop, UI, audio, and persistent data.	- Lectures - In-class demonstrations	- Assignments - Final Exam
Course Content	<p>By the end of this course, students will be able to:</p> <ol style="list-style-type: none"> 1. Understand fundamental programming concepts and computer organization 2. Write well-structured, properly commented C# programs 3. Use appropriate data types for different programming scenarios 4. Work with classes and objects (using existing classes) 5. Manipulate strings and process user input 6. Create basic 3D games in Unity 7. Inheritance and polymorphism for reusable gameplay code 8. Work with arrays and lists to manage collections of data 9. Use for and foreach loops to iterate through data 10. Integrate C# programming with Unity game development 11. Debug and test programs effectively 12. Capstone: complete small 3D Unity game project 		

Week	Topic	Implementation (theory/practice)	Required Reading, Preliminary preparation
1	Course description and Introduction	T	Instructor Notes
2	Iteration: for loops (gameplay use)	T/P	Gibson Bond, Jeremy. Introduction to game design, prototyping, and development : from concept to playable game with Unity and C#, 3rd edition, Boston: Addison-Wesley, 2023. ISBN: 9780136619949 (Library Catalogue Number: QA76.76.C672)
3	Foreach loops + working safely with collections	T/P	Gibson Bond, Jeremy. Introduction to game design, prototyping, and development : from concept to playable game with Unity and C#, 3rd edition, Boston: Addison-Wesley, 2023. ISBN: 9780136619949 (Library Catalogue Number: QA76.76.C672)
4	While / do-while loops + timers and repeat-until logic	T/P	Gibson Bond, Jeremy. Introduction to game design, prototyping, and development : from concept to playable game with Unity and C#, 3rd edition, Boston: Addison-Wesley, 2023. ISBN: 9780136619949 (Library Catalogue Number: QA76.76.C672)
5	Class design & implementation (Part 1)	T/P	Gibson Bond, Jeremy. Introduction to game design, prototyping, and development : from concept to playable game with Unity and C#, 3rd edition, Boston: Addison-Wesley, 2023. ISBN: 9780136619949 (Library Catalogue Number: QA76.76.C672)
6	Class design & methods (Part 2)	T/P	Gibson Bond, Jeremy. Introduction to game design, prototyping, and development : from concept to playable game with Unity and C#, 3rd edition, Boston: Addison-Wesley, 2023. ISBN: 9780136619949 (Library Catalogue Number: QA76.76.C672)

7	Course Review	T/P	
8	Midterm	Midterm	
9	Unity Text I/O (UI basics)	T/P	Gibson Bond, Jeremy. Introduction to game design, prototyping, and development : from concept to playable game with Unity and C#, 3rd edition, Boston: Addison-Wesley, 2023. ISBN: 9780136619949 (Library Catalogue Number: QA76.76.C672)
10	Unity Audio	T/P	Gibson Bond, Jeremy. Introduction to game design, prototyping, and development : from concept to playable game with Unity and C#, 3rd edition, Boston: Addison-Wesley, 2023. ISBN: 9780136619949 (Library Catalogue Number: QA76.76.C672)
11	Inheritance & polymorphism (game code architecture)	T/P	Gibson Bond, Jeremy. Introduction to game design, prototyping, and development : from concept to playable game with Unity and C#, 3rd edition, Boston: Addison-Wesley, 2023. ISBN: 9780136619949 (Library Catalogue Number: QA76.76.C672)
12	Delegates, events, UnityEvent (menus/game events)	T/P	Gibson Bond, Jeremy. Introduction to game design, prototyping, and development : from concept to playable game with Unity and C#, 3rd edition, Boston: Addison-Wesley, 2023. ISBN: 9780136619949 (Library Catalogue Number: QA76.76.C672)
13	Exceptions + safer runtime behaviour	T/P	Gibson Bond, Jeremy. Introduction to game design, prototyping, and development : from concept to playable game with Unity and C#, 3rd edition, Boston: Addison-Wesley, 2023. ISBN: 9780136619949 (Library Catalogue Number: QA76.76.C672)
14	Project Review	T/P	
15	Project Review	T/P	

16	Final Exam		
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Required Course Material(s) / Reading(s)/ Text Book(s)	Gibson Bond, Jeremy. Introduction to game design, prototyping, and development : from concept to playable game with Unity and C#, 3rd edition, Boston: Addison-Wesley, 2023. ISBN: 9780136619949 (Library Catalogue Number: QA76.76.C672)
Recommended Course Material(s)/ Reading(s) /Other	<ul style="list-style-type: none"> • Unity Learn tutorials • C# exercises on HackerRank and LeetCode • Microsoft C# documentation <p>Students should bring their storage devices. i.e.: USB Flash Drive</p>













ASSESSMENT		
Learning Activities	NUMBER	WEIGHT in %
Mid-Term	1	30
Quiz		
Assignment	1	30
Project		
Field Study		
Presentation / Seminar		
Studio Practice		
Other		
Contribution of Final Examination/Final Project/ Dissertation to the Final Grade	1	40
TOTAL		100






CONTRIBUTION OF COURSE LEARNING OUTCOMES TO PROGRAMME LEARNING OUTCOMES		
No	PROGRAMME LEARNING OUTCOMES	Level of Contribution (1-lowest/ 5-highest)

		1	2	3	4	5
1	Knows the historical development of the field of communication, basic concepts, theories.	✓				
2	Knows the basic concepts and terminology related to the field of game design.			✓		
3	Has knowledge about the history of computer and video games and developments in this field.		✓			
4	Knows game design processes and related applications.					✓
5	Has the ability to utilize various disciplines such as communication, art, music, psychology, mythology, cinema, etc. in the game design process.			✓		
6	Has the ability to analyze analog and digital game genres.				✓	
7	Has the ability to use contemporary game engines and problem solving skills.					✓
8	Has the knowledge of questioning the game designs with an analytic and critical perspective.				✓	
9	Has knowledge about media literacy.	✓				
10	Has the competence to prepare projects based on ethical principles in game development processes.			✓		
11	Has the competence to evaluate games as an art form.					✓
12	Has the competence to use game design concepts and methods in related fields such as design, software development and media.					✓
13	Has the competence to take part and responsibility in game development teams.					✓
14	Has the competence to collect, analyze and interpret analytical data about games and players.				✓	
15	Has the competence to develop and present a digital game project by using game design practices effectively.					✓
16	Evaluates artificial intelligence applications in their studies with a critical approach in terms of aesthetics and originality, and uses them in accordance with ethical rules.			✓		

ECTS / STUDENT WORKLOAD				
ACTIVITIES	NUMBER	UNIT	HOUR	TOTAL (WORKLOAD)
Course Teaching Hour (X weeks * total course hours)	14		3	42

Preliminary Preparation and self- study				
Mid-Term	1		20	20
Quiz				
Assignment	1		20	20
Project				
Field Study				
Presentation / Seminar				
Studio Practice				
Final Examination/ Final Project/ Dissertation	1		50	132
Other				
TOTAL WORKLOAD				132
TOTAL WORKLOAD / 25				5.28
ECTS				5

	SDG 1: No Poverty	×
	SDG 2: Zero Hunger	×
	SDG 3: Good Health and Well-Being	×
	SDG 4: Quality Education	√
	SDG 5: Gender Equality	×
	SDG 6: Clean Water and Sanitation	×
	SDG 7: Affordable and Clean Energy	×
	SDG 8: Decent Work and Economic Growth	×
	SDG 9: Industry, Innovation and Infrastructure	√
	SDG 10: Reduced Inequalities	×
	SDG 11: Sustainable Cities and Communities	×
	SDG 12: Responsible Consumption and Production	×

	SDG 13: Climate Action	×
	SDG 14: Life Below Water	×
	SDG 15: Life on Land	×
	SDG 16: Peace, Justice and Strong Institutions	×
	SDG 17: Partnership for the Goals	×

ETHICAL RULES WITH REGARD TO THE COURSE
Plagiarism Disclaimer

Detected and undetected plagiarism is a serious offence at any time and it could have devastating effects on your degree result and future professional life.

Plagiarism is easy to avoid if you make sure you thoroughly identify and recognize your sources and do not copy from visual examples, designs or notes taken directly from your sources word for word. The maximum citation limit cannot exceed 20%. Artificial intelligence citations are also considered within this scope. If proven otherwise, the student will fail the course.

ASSESSMENT DETAILS AND EVALUATION CRITERIA:

Final Grades will be determined according to the Course Learning Activities and Final Examination/ Project/ Dissertation Assessment Details as below, and comply with the Education and Examination Regulation set forth by the University.

Throughout the course, students will learn the theoretical base of the topic and they will be able to equip themselves with the practical know-how skills of Advertisement production. Also, students are expected to design a creative advertisement piece with the knowledge they have gained in the course.

During the class sessions, participation is a very important input for the learning process for the students. It is also vital to understand the effect of creativity input on the production process of advertisement.

70% attendance to courses is compulsory. Health reports belong to 30% absenteeism right.

PREPARED BY	Dr. Masoud Moradi
UPDATED	26.03.2026
APPROVED	