



UNIVERSITY OF MITROVICA “ISA BOLETINI”

Course Curriculum Model (Syllabus)		
Faculty:	Faculty of Mechanical and Computer Engineering	
Department:	Computer Science and Engineering	
Level:	I	
Code of the course:	509-CSE	
Course:	Game Development	
Course Status:	Elective	(elective)
Semester:	V	(winter)
Number of hours per week:	1+2	
ECTS:	5	
Time / location:		
Year of studies:	III	
Lecturer:	Berat Ujkani	
Assistant:	Shkëmb Abdullahu	
Contact details:	Lecturer	Assistant
Email:	berat.ujkani@umib.net	shkemb.abdullahu@umib.net
Tel:		

Content	This course introduces students to the design and implementation of 2D and 3D games by using Unity and C#. Through the projects, students will be able to learn to integrate essential components such as animation, sound, physics, interactivity, and scripting to develop complete functional games. The course prioritizes creativity, critical thinking, teamwork, and the implementation of programming and design ideas that align with current game industry standards. Students will also learn how to professionally present and advertise their game products.
Purpose	The course aim is to provide students with a solid theoretical and practical foundation in computer game development by using Unity and C#. The course progresses beyond basic projects such as Flappy Bird, focusing on the design and implementation of more complex games that include advanced features such as physics, animation, and user interface systems. Upon completion of this course, students will be able to implement complete 2D and 3D games, applying professional pipelines, and showing their creativity, teamwork, and project management skills relevant to the nowadays gaming industry.

Accessibility	Upon successful completion of the course, students will be able to: 1. Use the Unity Search Engine tool and C# scripting. 2. Design and develop 2D basic games, such as Flappy Bird. 3. Design and develop 3D games that incorporate physics, animation, colliders, rigidbodies, triggers, prefabs, and game objects, and connect them with scripting. 4. Use the physics engine to simulate realistic interactions and movements. 5. Manage the Animator 6. Design user interfaces, integrate audio, and deploy playable games. 7. Organize and supervise assets and scenes to create reusable and scalable game environments.	
Program	weeks	Lecture
	First week:	Course Introduction, installation of Unity Search Engine tool and C# programming language
	Second week:	GameObjects, components, and inputs
	Third week:	Transformations and movements
	Fourth week:	Physics such as Rigidbody and Collider
	Fifth week:	Practical project including first part of Flappy Bird (bird movement and dynamic background)
	Sixth week:	Practical project including second part of Flappy Bird (barriers, scoring and game over)
	Seventh week:	Implementation of UI such as Buttons, score display, menus
	Eighth week:	Introduction to 3D project
	Ninth week:	Creation of objects, materials, and lighting
	Tenth week:	Practical project: 3D Mini-game
	Eleventh week:	Animator monitoring and Animations
	Twelfth week:	Audio integration and visual effects
	Thirteenth week:	Creation of enemies
	Fourteenth week:	Optimization of gameplay and debugging
	Fifteenth week :	Final projects

Literature	Principal literature: • Joseph Hocking, Unity in Action: Multiplatform Game Development in C#, 2022. Recommended Literature: • Harrison Ferrone, Learning C# by Developing Games with Unity, 2021. • Unity Documentation: https://docs.unity.com/en-us																																																				
Teaching methodology	• Lecture • Discussion • Group work • Exercises • Homework • Real world projects																																																				
	Contribution to student workload (which should correspond to student learning outcomes - 1 ECTS credit = 25 hours) <table><tr><th>Activity</th><th>Hours</th><th>Days/weeks</th><th>Total</th></tr><tr><td>Lectures</td><td>1</td><td>15</td><td>15</td></tr><tr><td>Exercise sessions (with TA)</td><td>2</td><td>15</td><td>30</td></tr><tr><td>Practical work</td><td></td><td></td><td></td></tr><tr><td>Office hours</td><td>1</td><td>15</td><td>15</td></tr><tr><td>Fieldwork</td><td></td><td></td><td></td></tr><tr><td>Midterms, seminars</td><td></td><td></td><td></td></tr><tr><td>Homework</td><td>2</td><td>9</td><td>18</td></tr><tr><td>Self-study</td><td>2</td><td>15</td><td>30</td></tr><tr><td>Final exam preparation</td><td>1</td><td>5</td><td>5</td></tr><tr><td>Time spent in exams</td><td>3</td><td>2</td><td>6</td></tr><tr><td>Projects, presentations, etc</td><td>3</td><td>2</td><td>6</td></tr><tr><td>Total</td><td></td><td></td><td>125</td></tr></table>	Activity	Hours	Days/weeks	Total	Lectures	1	15	15	Exercise sessions (with TA)	2	15	30	Practical work				Office hours	1	15	15	Fieldwork				Midterms, seminars				Homework	2	9	18	Self-study	2	15	30	Final exam preparation	1	5	5	Time spent in exams	3	2	6	Projects, presentations, etc	3	2	6	Total			125
Activity	Hours	Days/weeks	Total																																																		
Lectures	1	15	15																																																		
Exercise sessions (with TA)	2	15	30																																																		
Practical work																																																					
Office hours	1	15	15																																																		
Fieldwork																																																					
Midterms, seminars																																																					
Homework	2	9	18																																																		
Self-study	2	15	30																																																		
Final exam preparation	1	5	5																																																		
Time spent in exams	3	2	6																																																		
Projects, presentations, etc	3	2	6																																																		
Total			125																																																		

Evaluation	Teaching methodology: (according to the Statute and Regulation for studies of UMIB)	
	Tests / Colloquia	
	Practical test during exercises	
	Seminary work	
	Interpretation and presentation of artistic creativity and other works	
	Assignments and other courses during the semester	
	Professional activities	
	Others (specify) - Project	50 %
	Final exam	50 %

Essential instructions;

The regular presence of students during course lecturers and exercises is obligatory. All seminar works that need to be submitted in written form are to be provided in printed format. It is obligatory that the visual and the content aspect of the required works is fully respected. Additionally, it is mandatory that all work adhere fully to the language spelling rules and APA style for citing sources.

Further instructions:

The students are required to prepare their seminar works on independent basis. There will be no tolerance for cases where the students have copy and paste materials written by someone else or from the Internet without detailed citation and source. All cases where the source is not cited, are treated as plagiarism and accordingly will be negatively assessed during the final evaluation of the student.

Ethics in teaching:

Active participation of students in lectures
Participation in discussion and comments
Mandatory independent work by utilizing alternative sources of information
Respect for lecture time schedules and no usage of cellular phones during lectures or e
Low tolerance for late arrivals and departures without valid reasons
Distribution of slides and teaching materials by the lecturer.

Deadlines

The deadlines for submission of seminars will be agreed in advance with students;
Students are for to deliver their work within the agreed submission deadline
Failure to arrive at the time when the assignment is explained does not justify the student for not submitting the seminar work.
In case of any travel or envisaged absence, the student has to submit in advance the assigned seminar work.
The student is entitled to request a consultation with the lecturer whenever he/she deems it reasonable and necessary for the performance of his/her work.

Course provider:

Berat Ujkani, PhD

(Signature)