SYLLABUS

1. Information regarding the programme

1.1 Higher education institution	**Babeş Bolyai University**
1.2 Faculty	**Faculty of Mathematics and Computer Science**
1.3 Department	**Department of Computer Science**
1.4 Field of study	**Computer Science**
1.5 Study cycle	**Bachelor**
1.6 Study programme / Qualification	**Computer Science**

2. Information regarding the discipline

2.1 Name of the discipline	**Game Development**						
2.2 Course coordinator	**Lect. dr. Ioan Lazar**						
2.3 Seminar coordinator	**Lect. dr. Ioan Lazar**						
2.4. Year of study	**3**	2.5 Semester	**2**	2.6. Type of evaluation	**C**	2.7 Type of discipline	**Elective**

3. Total estimated time (hours/semester of didactic activities)

3.1 Hours per week	4	Of which: 3.2 course	2	3.3 seminar/laboratory	1+1
3.4 Total hours in the curriculum	48	Of which: 3.5 course	24	3.6 seminar/laboratory	24
Time allotment:					hours
Learning using manual, course support, bibliography, course notes					8
Additional documentation (in libraries, on electronic platforms, field documentation)					7
Preparation for seminars/labs, homework, papers, portfolios and essays					8
Tutorship					2
Evaluations					8
Other activities:					

3.7 Total individual study hours	127
3.8 Total hours per semester	175
3.9 Number of ECTS credits	7

4. Prerequisites (if necessary)

4.1. curriculum	• Programming Fundamentals
4.2. competencies	• Good JavaScript programming skills

5. Conditions (if necessary)

5.1. for the course	• Course hall with projector
5.2. for the seminar /lab activities	• Laboratory with computers

6. Specific competencies acquired

Professional competencies	• C 4.3 Identify models and methods adequate to real life problem solving • C 2.1 Identify adequate software systems development methodologies • C 1.1 Proper description of programming paradigms and language specific mechanisms, and identification of semantical an syntactical differences
Transversal competencies	• CT1 Apply organized and efficient work rules and responsible attitude towards didactical and research field, in order to creatively use work potential; respect professional ethical principles • CT3 Use efficient methods and techniques for: learning, information search, research and development of capacities to adapt to the requirements of a dynamic society and to communicate in an international language

7. Objectives of the discipline (outcome of the acquired competencies)

7.1 General objective of the discipline	Enhance the students understanding of game development concepts through a practical and pragmatic approach Provide the students with an environment in which they can explore the usage and usefulness of service oriented concepts in various business scenarios Induce a realistic and industry driven view of software design concepts such as design patterns and their inherent benefits
7.2 Specific objective of the discipline	Give students the ability to explore various object oriented programming languages Improve the students abilities to tackle business requirements Enhance the students understanding of business needs and business value Provide students with insights into the way of working towards achieving high quality software through skilled trainers from the IT industry

8. Content

8.1 Course	Teaching methods	Remarks
2D Games - Getting started	Exposure: description, explanation, examples, discussion of case studies	
2D Games - Multiplayer games	Exposure:	

	description, explanation, examples, discussion of case studies	
2D Games - Geometry, physics, and animations	Exposure: description, explanation, examples, discussion of case studies	
2D Games - Idle games	Exposure: description, explanation, examples, discussion of case studies	
2D Games - Action games	Exposure: description, explanation, examples, discussion of case studies	
2D Games - Role-playing games	Exposure: description, explanation, examples, discussion of case studies	
3D Games - Geometries	Exposure: description, explanation, examples, discussion of case studies	
3D Games - Lights, camera	Exposure: description, explanation, examples, discussion of case studies	
3D Games - Textures, reflection	Exposure: description, explanation, examples, discussion of case studies	
3D Games - Animations	Exposure: description, explanation, examples, discussion of case studies	
3D Games - Extensions	Exposure: description, explanation, examples, discussion of case studies	
3D Games - Physics	Exposure: description, explanation, examples, discussion of case studies	
Bibliography		

1. Phaser.io, http://phaser.io 2. Three.js, http://threejs.org		
8.2 Seminar / laboratory	Teaching methods	Remarks
1. Creating a 2D game using Phaser	Dialogue, debate, case studies, examples, proofs	
2. Add multiplayer features	Dialogue, debate, case studies, examples, proofs	
3. Add game states	Dialogue, debate, case studies, examples, proofs	
4. Creating a 3D game using Three.js	Dialogue, debate, case studies, examples, proofs	
5. Add animation elements	Dialogue, debate, case studies, examples, proofs	
6. Add physics elements	Dialogue, debate, case studies, examples, proofs	
Bibliography 3. Phaser.io, http://phaser.io 4. Three.js, http://threejs.org		

9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program

- The course respects the IEEE and ACM Curriculla Recommendations for Computer Science studies;
- The course exists in the studying program of all major universities in Romania and abroad;
- The content of the course is considered the software companies as important for average programming skills.

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.5 Seminar/lab activities	Implement a system with REST services, server side notifications, and data synchronization	Project grading	100%
10.6 Minimum performance standards			
➢ No more than 3 absences are allowed for the seminar/lab activities			

Date	Signature of course coordinator	Signature of seminar coordinator
20.04.18	**Lect. dr. Ioan Lazar**	**Lect. dr. Ioan Lazar**

Date of approval Signature of the head of department