



MODULE DESCRIPTION

Module title	Module code
Video Game Design and Development	

Lecturer(s)	Department where the module is delivered
Coordinator: Žilvinas Ledas Other lecturers:	Department of Software Engineering Faculty of Mathematics and Informatics Vilnius University

Cycle	Type of the module
First	Optional

Mode of delivery	Semester or period when the module is delivered	Language of instruction
Face-to-face	Autumn (5, 7) semester	Lithuanian

Prerequisites
Prerequisites: Mathematics for Software Engineering I, Procedural programming, Object-oriented programming

Number of credits allocated	Student's workload	Contact hours	Self-study hours
5	130	58	72

Purpose of the module: programme competences to be developed		
Purpose of the module – knowledge transfer and achievement of capabilities in video game design and development area.		
Generic competences:		
<ul style="list-style-type: none"> • Communication and collaboration (<i>GK1</i>). • Life-long learning (<i>GK2</i>). 		
Specific competences:		
<ul style="list-style-type: none"> • Knowledge and skills of underlying conceptual basis (<i>SK4</i>). • Software development knowledge and skills (<i>SK5</i>). • Technological and methodological knowledge and skills, professional competence (<i>SK6</i>). 		
Learning outcomes of the module: students will be able to	Teaching and learning methods	Assessment methods
Understand what a video game is, design and develop simple video games and understand new and emerging technologies in the area.	Lectures with discussions, case analysis, individual reading, tutorials, group project assignments.	Group project assignment fulfilment and presentation, examination (in written form).
Understand what kind of design documents are needed in the process and what are they used for. Write such documents.		
Understand how game development process is organized and managed.		
Work in teams: have common goals, manage project, present results orally and in writing.	Individual reading, tutorials, group project assignments.	Group project assignment fulfilment and presentation
Choose right tools for their project tasks and learn how to use them.		

Content: breakdown of the topics	Contact hours						Self-study work: time and assignments		
	Lectures	Tutorials	Seminars	Practice	Laboratory work (LW)	Tutorial during LW	Contact hours	Self-study hours	Assignments
1. Introduction (what a video game is; video game industry; game types).	4	1					5	2	Individual reading. Each topic has matching group project assignments and material for individual learning.
2. Game design (game mechanics and prototyping; game design document; level design).	5	1					6	3	
3. Visuals (sketches; 2D and 3D graphics; lighting and textures).	5	1					6	3	
4. Sound (music; sound effects).	2						2	1	
5. Game programming (basic game architecture; artificial intelligence; scripting).	5	1					6	3	
6. Input devices.	1						1	1	
7. Game development process management (team and time management; iterative development; playtesting).	5	1					6	3	
8. Mobile games.	3	1					4	2	
9. Gamification and game mechanics in non game systems.	2						2	1	
10. Group project assignments and presentations.		2			16	6	18	53	
11. Exam (in written form)							2		2 hours for exam.
Total	32	8			16	6	58	72	

Assessment strategy	Weight %	Deadline	Assessment criteria
Group project assignment fulfilment	40-50	September-December	<p>Group size: 3-5 students. There are 6 assignments:</p> <ol style="list-style-type: none"> Forming a team, writing and presenting project idea document (September, 0.4 points). Writing and presenting game design document, collecting and presenting initial visual and sound assets (October, 1.5 points). Making and presenting initial game prototype and revised game design document (end of October – beginning of November, 1.3 points). Making and presenting finished game prototype (end of November – beginning of December, 1.3 points). Writing a review of the other team game with suggestions how to improve it (December, 0.3 points). Final presentation of prototypes (December, 0.2 points). <p>In order to complete and present next tasks, all previous must be completed and presented.</p> <p>When students are late with handing in documents or presenting results, the points are reduced by: 24 hours - 5%; 1 week - 25%; 2 weeks - 50%; 3 weeks -25%; 4 weeks and later - 100%.</p> <p>Assessment criteria:</p> <ul style="list-style-type: none"> Ability to analyse task/question and ability to practically use knowledge acquired in lectures. How completed assignments implement requirements and students' ability to give valid reasons for selected design solutions. Ability to work in a team and respect deadlines.

Additional individual assignment	0-6	Beginning of October	Students can choose optional individual assignments from a given list of tutorials. Depending on complexity of chosen tutorial and quality of implementation student can get up to 0.6 points.
Exam (in written form)	50-60	Exam session	Ability to show knowledge and its application for small tasks. Exam consists of open, semi-open, and closed type questions or tasks. There are 10 questions or tasks (each worth 0.5 points) and 2 additional, optional questions or tasks (each worth 0.5 points).

Author	Publising year	Title	Number or volume	Publisher or URL
Required reading				
Žilvinas Ledas		Lecture slides		http://uosis.mif.vu.lt/~zledas/gamedev/#Turinys
Steve Rabin (editor)	2009	Introduction to Game Development (2nd edition)	ISBN: 978-1584506799	Charles River Media.
Recommended reading				
David Michael	2003	The Indie Game Development Survival Guide	ISBN: 978-1584502142	Charles River Media.