

Course programme

Course code IFI7302.DT	Basics of Game Development		
ECTS credits: 4	Amount of contact lessons: 28	Teaching semester: Autumn	Assessment form: pass or fail assessment
Course objectives:	The objective of the course is to provide knowledge and introduce practical skills in order to develop digital games. Participants get familiar with several game development environments (eAdventure, Scratch, Game Maker, Unity) learn to use one of them in more details (Unity).		
Brief description of course content: (including the description of the independent work)	<p>Course is covering following topics:</p> <ol style="list-style-type: none"> 1. Coding games by the example of Code Monkey. 2. Game development without coding by the example of eAdventure. 3. Visual (block) coding by the example of Scratch 4. Basic coding by the example of GameMaker 5. Advanced coding by the example of Unity <p>Independent work is described in the section “Independent work”.</p>		
Learning outcomes:	<p>In the end of the course students:</p> <ol style="list-style-type: none"> 1. Have overview of different game development tools; 2. Know in details how to implement a game in selected (e.g. Unity) development environment. 		
Assessment Methods:	Course ends with the pass or fail assessment. For achieving the positive result students are expected to submit all individual home tasks according to schedule (see details in the section “Information about the course”). Grading method is introduced in the “Grading criteria” section.		
Lecturer(s):	Martin Sillaots, Mikhail Fiadotau, Sander Aido		
Course title in Estonian:	Mängude arendamine algajatele		
Prerequisted course(s):	None		

Compulsory literature:	Course materials: http://htk.tlu.ee/icampus/pg/groups/223878/gamedev/
Replacement literature:	eAdventure manual: http://e-adventure.e-ucm.es/tutorial/files_EN/eAdventure-v1.3RC-2-User_s-guide-en_EN.pdf Scratch tutorials: https://scratch.mit.edu/tips Game Maker: https://www.yoyogames.com/learn Unity Tutorials: http://unity3d.com/learn/tutorials
Participation and exam requirements:	The requirements for the positive assessment are: <ol style="list-style-type: none"> 1. Submission of all (12) individual home assignments. 2. Attending at least in 70% of workshops (10 out of 14). 3. Collecting at least 70% of points (14 out of 20).
Independent work:	All assignments are based on individual home activities: <ol style="list-style-type: none"> 1. Searching, playing and introducing alternative coding games 2. Further development of graphical adventure game with eAdventure. 3. Further development of single player pong game into 2 players game with the Scratch. 4. Further development of the NIM game to make it unbeatable with the Scratch. 5. Further development of started platformer game with the GameMaker. 6. Modification of educational snake game for different educational goal with GameMaker. 7. Creating simple guessing game with the Unity. 8. Creating text based adventure game with the Unity. 9. Create additional levels for block breaker (advanced Pong) game with the Unity. 10. Further development of the Space Invaders game with the Unity.

<p>Grading criteria scale or the minimum level necessary for passing the subject:</p>	<p>Assessment of home assignments is based on following scale:</p> <p>2 points – required methods are used in creating game code and code is fully operational.</p> <p>1 point – required methods are partly used or code is partly working.</p> <p>0 points – work is missing or is delivered after the deadline</p> <p>The final result is calculated as total sum of collected points. Maximum is 20 points.</p>
<p>Information about the course:</p> <p>(Topics by contact session, deadlines of independent works and exams/assessments times)</p>	<ol style="list-style-type: none"> 1) Sept 5 - Coding Games (Martin Sillaots) Code Monkey (www.playcodemonkey.com) Assignment: Search, play and introduce similar coding games 2) Sept 12 - Game Dev without coding (Martin Sillaots) eAdventure (http://e-adventure.e-ucm.es/) Developing graphical adventure game Assignment: Continue started adventure with your original episodes 3) Sept 19 - Visual Coding with Scratch (Martin Sillaots) Scratch (https://scratch.mit.edu/) Developing the simplest action game - Pong Assignment: Modify previously created single player game into 2 player game - Pong for 2 (Tennis) 4) Sept 26 - Visual Coding with Scratch (Martin Sillaots) Developing the simplest puzzle game - NIM Assignment: Modify previously created game and make it unbeatable - Invincible NIM 5) Oct 3 - Basic Coding with Game Maker (Mikhail Fiadotau) GameMaker (https://www.yoyogames.com/gamemaker) Developing simple platformer game Assignment: Add extra levels and monsters to previously created game 6) Oct 10 - Basic Coding with Game Maker (Mikhail Fiadotau) Developing simple learning game – Math Snake 7) Oct 17 - Basic Coding with Game Maker (Mikhail Fiadotau) Modifying previously created game – Words Snake Assignment: Modify the game for a different educational goal OR make a prototype of another classic game with educational content 8) Oct 31 - Advanced Coding with Unity (Martin Sillaots, Sander Aido)

	<p>Coding with Unity - Number wizard console game</p> <p>9) Nov 7 Advanced Coding with Unity (Martin Sillaots, Sander Aido)</p> <p>Integrating game code and interface - Number wizard UI Assignment: Develop similar trivial guessing game – e.g. Ask Sphinx</p> <p>10) Nov 14 Advanced Coding with Unity (Martin Sillaots, Sander Aido)</p> <p>Developing text based adventure game - Text Adventure Assignment: Develop your own story</p> <p>11) Nov 21 Advanced Coding with Unity (Martin Sillaots, Sander Aido)</p> <p>Developing advanced pong game - Block Breaker 1st level</p> <p>12) Nov 28 Advanced Coding with Unity (Martin Sillaots, Sander Aido)</p> <p>Developing additional levels and features to previously created game - Block Breaker advanced Assignment: Create additional levels to Block Breaker</p> <p>13) Dec 5 Advanced Coding with Unity (Martin Sillaots, Sander Aido)</p> <p>Developing basic mechanics of shoot them up game – Space Attack</p> <p>14) Dec 12 Advanced Coding with Unity (Martin Sillaots, Sander Aido)</p> <p>Developing additional features to shoot-em-up game – Space Attack Assignment: create original features to the Space Attack OR develop similar classical game with personal touch.</p>
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Teaching Unit in charge:	School of Digital Technologies
Course programme is prepared by:	Martin Sillaots
Date:	15.08.17

The course program is registered in the academic unit:

Date:	17.08.2017
Name of academic coordinator:	Kristi Oikimus