POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

COURSE DESCRIPTION CARD - SYLLABUS

Course name

Game design

Course

Field of study	Year/Semester
Computing science	1/1
Area of study (specialization)	Profile of study
Gams and Internet Technologies	general academic
Level of study	Course offered in
Second-cycle studies	polish
Form of study	Requirements
full-time	compulsory

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
30	30	
Tutorials	Projects/seminars	

Number of credit points

5

Lecturers

Responsible for the course/lecturer:

dr inż. Jakub Marszałkowski

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Faculty of Computing and Telecommunications

ul. Piotrowo 3 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

Students beginning this course should have basic knowledge of programming techniques and languages, operating systems, and Internet technologies.

He or she should have general programming skills and the ability to obtain information from indicated sources.

He/she should also understand the need to broaden his/her competencies and be ready to start cooperation within the team. Moreover, in social competencies, the student must present such attitudes as honesty, responsibility, perseverance, cognitive curiosity, creativity, personal culture, and respect for other people.

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Course objective

1. To acquaint students with knowledge about the non-programmatic aspects of computer game development: game design, game market and modern game marketing.

2. To provide skills and competencies that provide the basis for creating your own project in the game market or for working in game development companies.

Course-related learning outcomes

Knowledge

1. has structured and theoretically based general knowledge related to the design of computer games

2. has advanced detailed knowledge of computer game design

3. knows of development trends and the most important new developments in the field of computer game design

4. has an advanced and detailed knowledge of the processes taking place in the computer game design cycle

Skills

1. is able to plan and conduct experiments, including computer measurements and simulations, interpret the results obtained and draw conclusions from the design of computer games

2. is able to use simulation and experimental methods to formulate and solve engineering tasks in the field of computer game design

3. is able to integrate knowledge from various areas of computer science (and, if necessary, knowledge from other scientific disciplines) and apply a system approach, including non-technical aspects, when formulating and solving engineering tasks in the field of computer game design

4. is able to evaluate the usefulness and possibility of using new achievements (methods and tools) and new computer game design products

5. is able to assess the usefulness of methods and tools used to solve an engineering task in the field of computer game design, consisting of the construction or evaluation of an IT system or its components, including the limitations of these methods and tools

6. is able to design a computer game according to a given specification, taking into account non-technical aspects

Social competences

1. understands that knowledge and skills in computer game design are rapidly becoming obsolete in an ever-changing market

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

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As lectures are concerned, the assumed educational results are verified by assessing the knowledge, skills, and competencies demonstrated as part of the project defense.

In terms of laboratories, verification of the assumed educational results is carried out by

- the assessment of the student's preparation of single project increments for subsequent laboratory classes and the evaluation of skills related to laboratory tasks,

- evaluation and defense of tasks performed by students during classes.

Programme content

The following issues will be discussed during the lecture:

- Game markets available for small businesses and single developers: mobile games, indie games, self-publishing.

- Game as a startup. Investors search. Game marketing, methods of acquiring players, business models, the principles of profitability. Issues of performance and security.

- Contemporary game market. Modern digital distribution and its impact on games, producers, distributors, and consumers.

- Introduction to game research (ludology), a scientific discipline that studies games using humanities and social science techniques such as cultural studies, sociology, psychology, or even economics.

- Rapid Application Development tools and technologies that can be used both for prototyping and creating multi-platform games.

- Game mechanics, security, and vulnerabilities (exploits), powergaming. Creating mechanics, rules and practice. The role of mathematics and probability calculation in mechanics.

- Economics simulation systems in computer games, analysis of existing ones, creation of economic systems.

- Modern applications of games in education and marketing: entertainment-education (edutainment), gamification. Simulation and decision games. Innovative types of games: serious games, alternative reality games, augmented reality, and their applications.

- Elements of the legal system relevant to the gaming, Internet and information technology industries in general (so-called new technology law), primarily copyright law.

- Specifications of noncomputer games whose components enter into computer games: board games, role-playing games, LARPs (Live Action Role Playing), field games.

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Laboratory classes are conducted in the form of 4-hour exercises, taking place in a computer laboratory. Teams of several students carry out the exercises. Within the laboratory classes, selected topics from the lecture will be deepened and workshops and projects will be carried out:

- Working with documents developed during game design, especially Game concept document. Game pitching.

- Creating a game concept, game concept compo.

- Workshops of creating mechanics, mechanical design using Rapid Application Development environment - programming in a scripting language.

- Workshops on level design, game prototype with several levels in Rapid Application Development - programming in the scripting language.

- Workshops of creating simulations of economic systems for games, design of such a system.

- Working with legal documents, such as a copyright transfer agreement.

Design of own game in the following stages:

- Creating a concept and game concept document.

- Developing a more detailed description of game mechanics and low-level gameplay.

- Creating a prototype of mechanics and gameplay with a paper prototyping technique.

- Testing and improving mechanics and gameplay.

Teaching methods

1. Lecture: multimedia presentation, multimedia show, demonstration, discussion.

2. Laboratory exercises: practical exercises, discussion, teamwork, brainstorming with games, workshops, case studies, demonstration.

Bibliography

Basic

1. Projektowanie gier: podstawy, Ernest Adams, 2011 Helion

2. Grywalizacja: jak zastosować mechanizmy gier w działaniach marketingowych, Paweł Tkaczyk., 2012 Helion

3. Grywalizacja: mechanika gry na stronach WWW i w aplikacjach mobilnych, Gabe Zichermann, Christopher Cunningham, 2012 Helion

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Additional

1. Ludzie i gry, Roger Caillois, 1997, Oficyna Wydawnicza Volumen

2. The Art of Game Design: A book of lenses, Jesse Schell, 2008 Elsevier

3. A Theory of Fun for Game Design, Raph Koster, 2004 Paraglyph Press

4. Specyfikacja GameMaker: http://help.yoyogames.com/home oraz http://wiki.yoyogames.com

5. Gamestorming: A Playbook for Innovators, Rulebreakers, and Changemakers, Dave Gray, Sunni Brown, James Macanufo, 2010 O'Reilly

6. Homo Ludens, 2009-2018, ludologiczny periodyk naukowy, http://ptbg.org.pl/HomoLudens/

Breakdown of average student's workload

	Hours	ECTS
Total workload	117	5,0
Classes requiring direct contact with the teacher	62	3,0
Student's own work (literature studies, preparation for laboratory classes, project preparation) [1]	85	3,0

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[1] delete or add other activities as appropriate