



2EL6060 – Serious Game

Instructors: Catherine Soladie
Department: CAMPUS DE RENNES
Language of instruction: ANGLAIS
Campus: CAMPUS DE RENNES
Workload (HEE): 60
On-site hours (HPE): 35,00
Elective Category : Fundamental Sciences
Advanced level : Yes

Description

What if you save the world from your console?

The game, and especially the video game, is a fascinating medium. You have certainly experienced a maximum concentration, facing a screen or a board, hours that we no longer feel, challenges and limits that are crossed and exceeded. The game does not announce its ideas, it makes them live. The game does not explain, it implies.

Today, this strength of the game shows us that it is possible to go beyond mere entertainment: more and more, it allows to transmit knowledge, know-how, ecological or social awareness, ... In short, the game becomes seriously useful, from industry to classrooms.

In this elective, you will discover how the serious game has transformed the transmission of ideas in many areas, from learning to read to car repair, through education to gestures of care. These examples will allow you to become a designer of your own serious game, because your ideas also deserve to be playable.

Highlights

Discover and analyze several use cases and their effectiveness
Introduce one of the major themes of the serious game by making a YouTube popularization video
Build and develop as a group project your own serious game using a video game development platform such as *Unity*

Quarter number
SG8



Prerequisites (in terms of CS courses)

Computer science :

- Algorithms
- Programming language (basis)

Syllabus

Background (10%)

- Introduction to the elective and major issues around the serious game.
- Discoveries of industrial problems and specific cases throughout the elective.
- DragonBox: How do 5-year-olds learn algebra in 50 minutes?

YouTube popularization video (25%)

- Subject choice among several proposed themes (game design vs gameplay, role of the score, interaction loop, ...)
- Creation of a YouTube video explaining the issues of the chosen theme (1 production per student).
- Share and watch videos on the Youtube channel dedicated to the elective.

Realization of a proof of concept of serious game (65%)

- In groups of 3 to 5 people.
- Accompanied by a professional in the video game industry.
- On a subject of your choice.
- The design, as well as the supervision will be done in two distinct but complementary sets:
 - the serious aspect, the useful objective to reach, the message or the knowledge to be transmitted;
 - the game aspect, the mechanics of the game implemented so that the interaction with the player works.
- Test your creation with your classmates and your entourage, and make it evolve in iterative mode!

Class components (lecture, labs, etc.)

- Presence course: 10% (6 HEE)
- PW and evaluation: 40% (24 HEE)
- Project and YouTube video : 50% (30 HEE)



Grading

Youtube video on a theoretical aspect of the serious game: 1/4 of the note
Example analysis of a serious game : 1/4 of the note
Pitch and Defense of the project of realization of a serious game: 1/2 of the note

Course support, bibliography

Introduction au Serious Game, de Julian Alvarez et Damien Djaouti
Concevoir un serious game pour un dispositif de formation, de Béatrice Lhuillier
Les serious games. Une révolution, de Yasmine Kasbi
La Gamification: Ou l'art d'utiliser les mécaniques du jeu dans votre business, de Clément Muletier et Guilhem Bertholet
Serious Game : Révolution pédagogique, de Valérie Lavergne Boudier et Yves Dambach

Resources

Teaching team:

- Catherine SOLADIE
- Externals

Size of PW : ≤ 30

Software tools and number of licenses needed:

- Unity (free for students): <https://unity3d.com/en/unity>

PW rooms:

- 251 and 252, Rennes Campus (up to 30 students in each room / 15 posts per room)

Learning outcomes covered on the course

At the end of this lesson, you will be able to:

- Define the main concepts related to serious games (C2.1)
- Argue the practices implemented in existing serious games (C2.3)
- Implement a video game (C6.2)
- Combine your software development skills with new skills (such as pedagogy or medicine) in a multidisciplinary approach (C2.2)
- Imagine and design a serious game (C3.3)



- Be proactive and get involved in the creation of a YouTube video and a POC (C3.3)
- Take into account the game play and the UX in the creation of a serious game (C4.2)
- Use the expertise and personal knowledge of at least one member of the group (eg music, art, science, ecology) to design a serious game (C8.1)

Description of the skills acquired at the end of the course

- C2 Jalon 2
 - C2.2 **Importer** : Réutiliser concrètement des connaissances issues d'un autre domaine ou discipline dans un problème donné
- C6 Jalon 2
 - i. C6.2 **Concevoir un logiciel** : Par le biais d'une réalisation pratique, modéliser un logiciel complexe
- C3 Jalon 2
 - C3.3 **Innover** : Etablir des POC ou équivalent
- C8 Jalon 2
 - C8.1 **Travailler en équipe** : Associer chaque membre de l'équipe en fonction de ses forces