UNIVERSITÉ DE FRIBOURG
UNIVERSITÄT FREIBURG

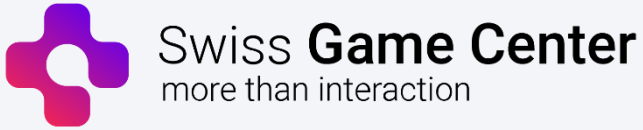
Spring 2020

DESIGN AND GRAPHICS PROGRAMMING FOR (VIDEO-)GAMES DEVELOPMENT

PRELUDE & NOCTURNES

Maurizio Rigamonti

SOMETHING ABOUT ME



GENERAL OVERVIEW

THE 6 ‘W’

- **W1: Who?**
  Master students in CS
- **W2: What?**
  Game design, Unity 3D, 2D graphics, some general techniques for videogames
- **W3: When?**
  Friday, 14h15 – 17h00 (2h classes + 1h project)
- **W4: Where?**
  Fribourg, Pérolles 2, Room D230
- **W5: Why?**
  Because we like videogames and we are creative
- **W6: Welcome!**

THE CLASS

- **Requirements**
  - Be **really** interested in videogames
  - Programming skills for students in CS

- **5 ECTS**

- **Workload**
  - Class: 30h / semester
  - 1 project: **minimum** 5h per week

- **Structure: 50% design + 50% techniques**

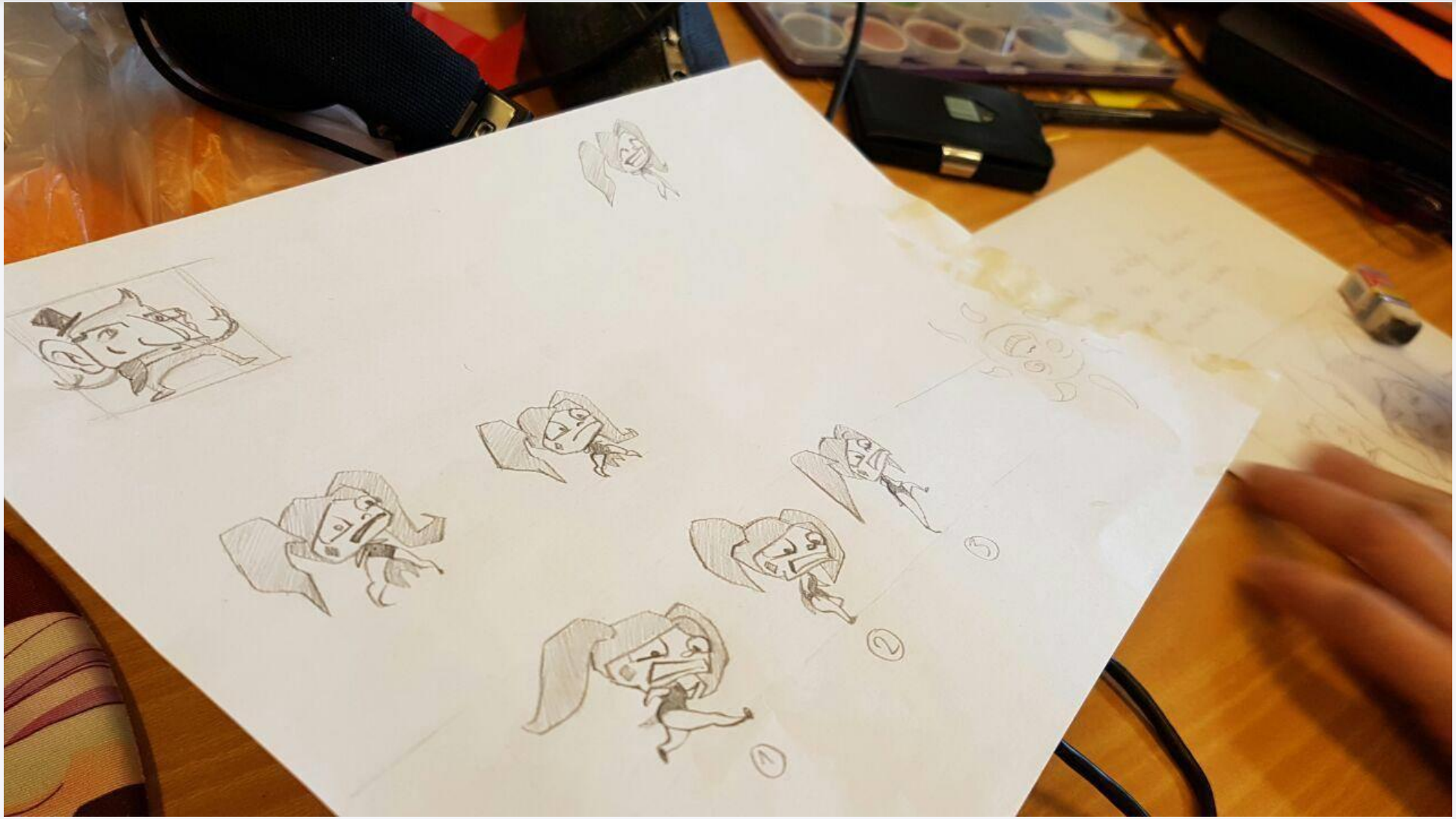
OUTCOMES

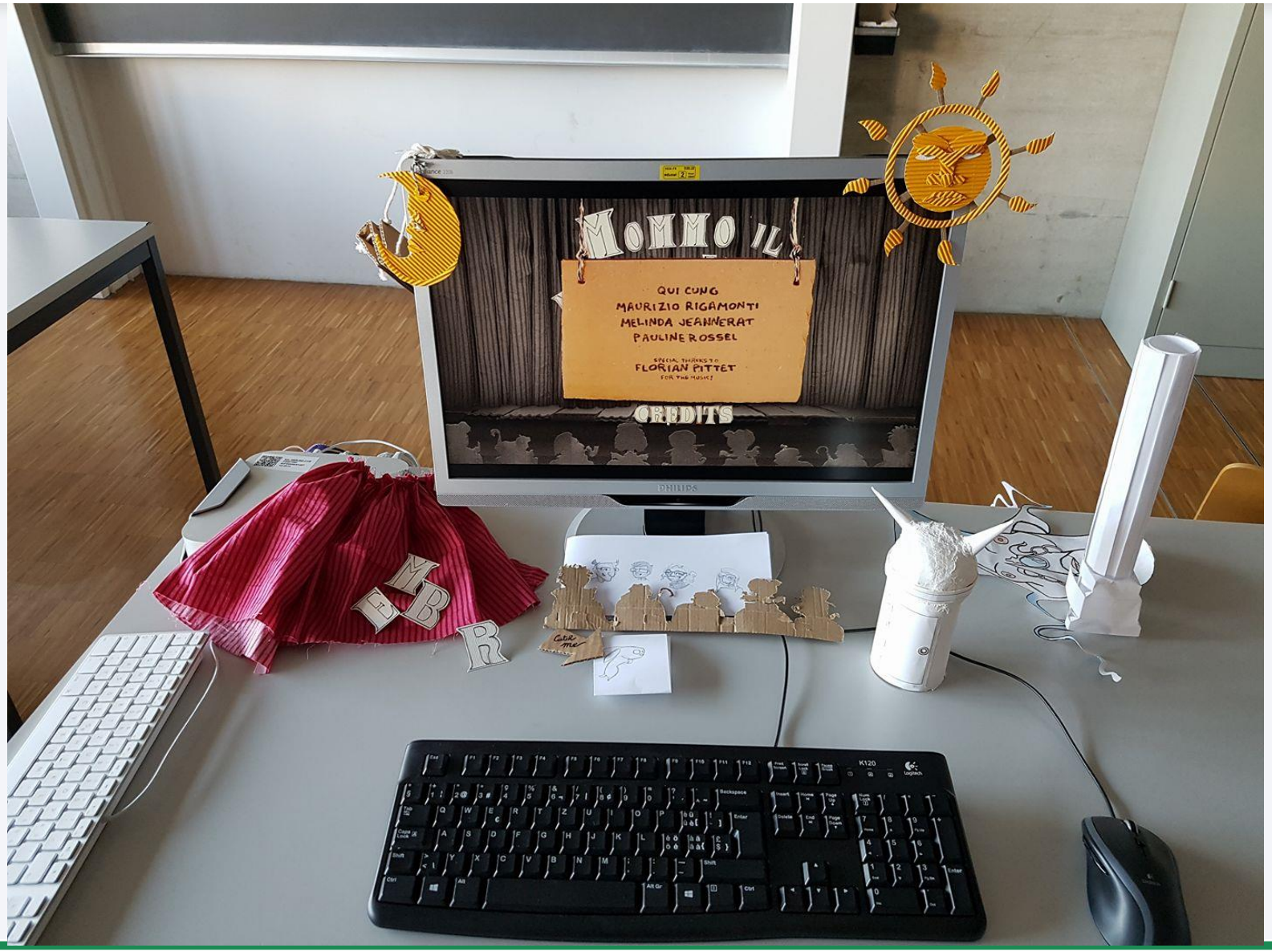
- **Design videogames**
- Evaluate concepts and prototypes
- Understand the different components of a game engine and new methods
- Include in your design commonly used algorithms/strategies for videogames
- Team collaboration

FIRST EXERCISE

www.oniroforge.ch/mommo

1. Play the game - 5 minutes
2. Write your opinion, bad/good features, feelings (3 Post-it max) – 5 minutes
3. Put them on the whiteboard




MOMMO IL
QUI CUNG
MAURIZIO RIGAMONTI
MELINDA JEANNERAT
PAULINE ROSSEL
SPECIAL THANKS TO
FLORIAN PITTET
FOR THE MUSIC!
CREDITS
PHILIPS
K120

PLANNING

Design

- The designer
- Her goals
- The game
- Its anatomy
- Themes
- The idea
- The loop

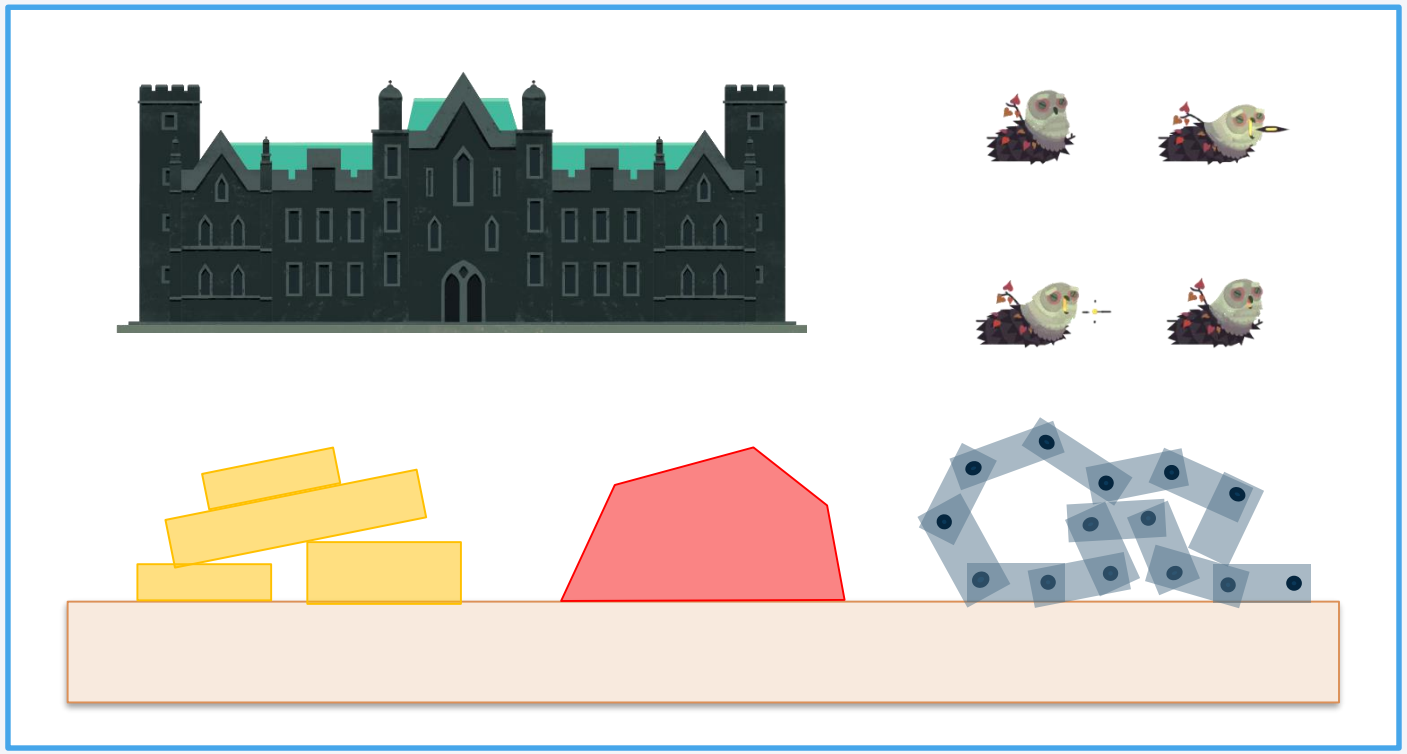
Tutorial

- Unity
- Platformer 2D

Design
- The player
- Players’ mind
- Game mechanics

Design
- Game balance

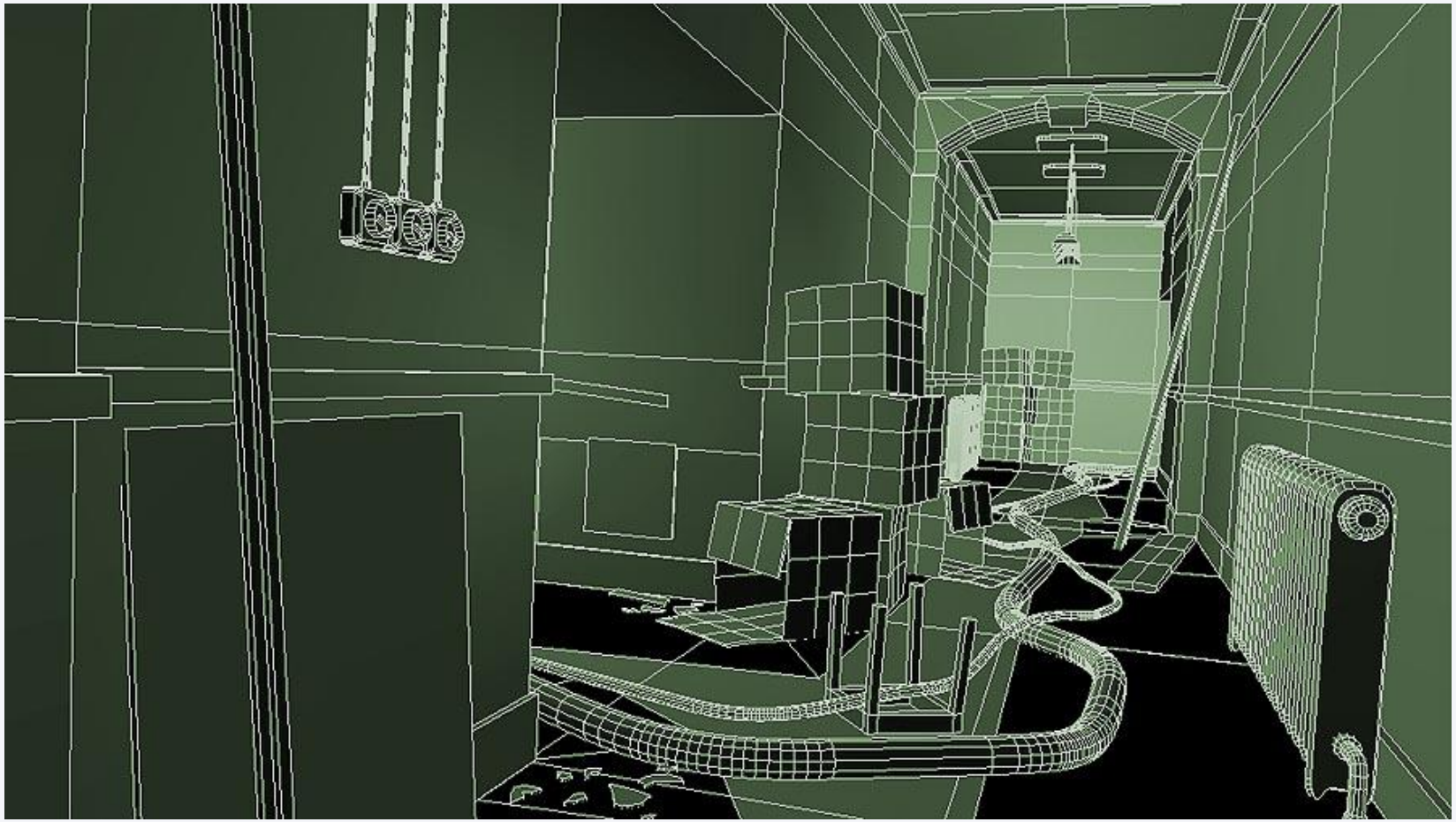
Design
- Puzzle
- Interfaces



Development
- Overview of 2D engines

Pictures: Clément Chassot and Shanti Kronig

Design
- Interest curves
- Story



Development
- A glance to 3D graphics

Design
- Indirect control
- Worlds

Development
- Particle systems and shaders

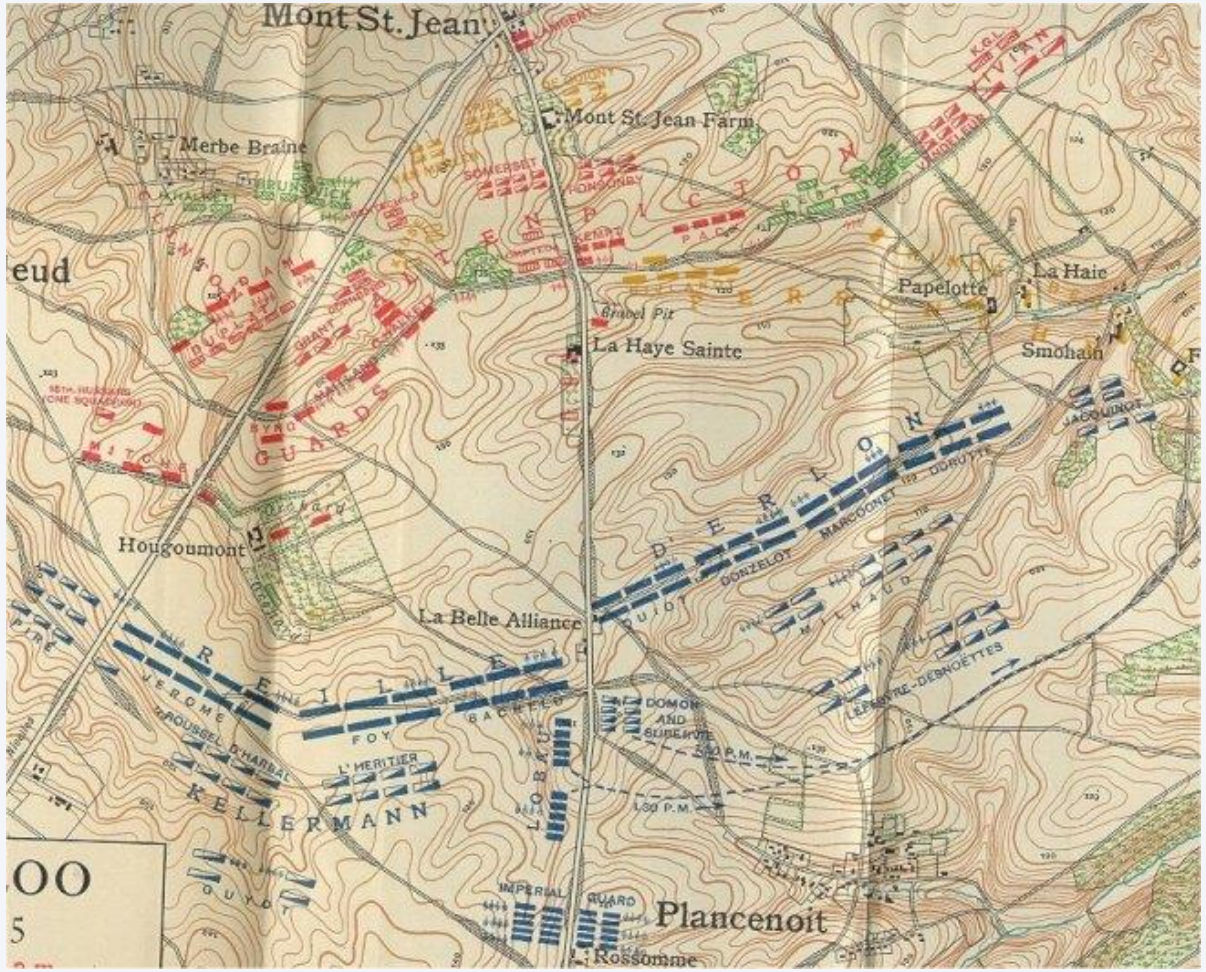
Design
- Characters

Development
- AI basics

Design
- Spaces
- Aesthetics
- Other players

Development
- Action-oriented AI

Design
- Communities
- Team
- Documents
- Playtesting



Development
- Tactical AI

Design
- Technology
- Clients
- Pitch

CHAPTER 18

Design
- Profit
- Transform
- Responsibilities
- Motivation

To negociate

- Other techniques
- Special events
- Post mortem
- Development session

EVALUATION

EXAM

- **written, 90 minutes**
- **Spring/summer 2020**
- **Design**
  - Topics
  - Given situations
  - Invent a concept
  - Apply a “model”
- **Technology**
  - Explain topics
  - Apply to a given scenario

PROJECT

- **Conceive and develop a game**

- **Minimal requirements**
  - CS: 48h contests model, indie game
  - 1-2 levels (or more)
  - 2-4 persons per group

- **Each week, free presentation and brainstorming**

- **Evaluation**
  - 30 % of the final note
  - Jury, the list of criteria will be distributed

- **Collaborations?**
  - Eikon
  - SGC

DEMO OF GAMES ?

- **Blueprint**
- **Monique**
- **Hokuto no Neko**
- **Transplant Academy**
- **Ants**
- **Studyne**
- **EPIC 2019**
- **Tempus Edax**

QUESTIONS?