

## Animation and behavioral simulation



### SCHOOL

Polytech Graduate School of Engineering



### CAMPUS

Belle-Beille



### LEVEL

Engineering 5th year



### OPEN TO EXCHANGE STUDENTS

Yes



### SEMESTER

Fall (S1)

> **Degree course:** Graduate School of Engineering - Automation and Computer Engineering

> **Teaching unit:** UE 9.4.2 IHM and RV

> **Course language:** English

> **Duration (hours):** 32

> **ECTS:** 2

> **Teacher(s):** Paul Richard

#### > Assessment:

Continuous assessment

Final exam

#### > Teaching methods:

Lecture course                      hours

Tutorial course                      hours

Practical work                      32      hours

Case study

Project

## COURSE DESCRIPTION

Implementation of real-time animation techniques

1. Animation controlled by the user (keyboard / mouse)
2. Animation triggered by proximity (distance / entity)
3. Animation triggered by behavior (gesture / voice)

Implementation of immersive behavioral simulations

1. Behavioral simulation integrating a virtual entity
2. Behavioral simulation integrating several entities
3. Simulation integrating interacting virtual entities

## OBJECTIVES

Students will apply and deepen their knowledge of real-time animation of virtual entities (humanoids, robots or animals), simulation and behavioral interaction under the Unity3D environment. They will:

1. Be able to integrate and animate complex virtual entities in real time
2. Be able to develop simulations integrating reactive virtual entities
3. Know how to develop simulations integrating autonomous virtual entities

## PREREQUISITES

Human-Computer Interaction and Virtual Reality (3A), Virtual Reality (4A)

## SELECTIVE BIBLIOGRAPHY

Learning C# Programming with Unity 3D, Alex Okita, Taylors and Francis (2015)

- Getting Started with 3D Animation in Unity: Animate and Control your 3D Characters in Unity, Patrick Félicia (2018).