RÉPUBLIQUE FRANÇAISE
Liberté
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angers

Industrial challenge

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):** 16
> **ECTS:** 1
> **Teacher(s):** Paul Richard

> **Assessment:**
[X] Continuous assessment
[ ] Final exam

> **Teaching methods:**
[ ] Lecture course   hours   [ ] Case study
[ ] Tutorial course   hours   [ ] Project
[X] Practical work   16   hours

COURSE DESCRIPTION

1. Group brainstorming
2. Analysis and distribution of tasks
3. Modeling of software bricks
4. Implementation and unit tests
5. Integration and initial assessment
6. Correction and delivery of the application

OBJECTIVES

collaborative design and production (all students of the class) of an immersive virtual reality application integrating all the knowledge seen during lessons 3A, 4A and 5A. Offer an innovative, possibly collaborative application (virtual environment integrating several virtual entities in mutual interaction and with the submerged user (s)). Search for industrial partner.

PREREQUISITES

Human-Computer Interaction and Virtual Reality (3A), Virtual Reality (4A), Animation and Behavioural Simulation (5A), Multimodality and Haptic Interaction (5A), Immersion and Interaction Techniques (5A)

SELECTİVE BİBLİOGRAPHY

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).
- Human-Computer Interaction (second edition) par Alan Dix, Janet Finlay, Gregory Abowd and Russell Beale. London, UK : Prentice Hall Europe, 1998, 638 p.
- 3D User Interfaces: Theory and Practice, By Doug Bowman, Ernst Kruijff, Joe LaViola, and Ivan Poupyrev, 512 p. Addison Wesley (2004)
- Enhancing Interaction in Mixed Reality: The Impact of Modalities and Interaction Techniques on the User Experience in Augmented and Virtual Reality
- Augmented Reality with Unity AR Foundation: A practical guide to cross-platform AR development with Unity 2020 and later versions
- Hands-On Unity 2021 Game Development: Create, customize, and optimize your own professional games from scratch with Unity 2021, 2nd Edition, Nicolas Alejandro Borromeo Packt Publishing
- Learning C# by Developing Games with Unity 2021: Kickstart your C# programming and Unity journey by building 3D games from scratch, 6th Edition, Harrison Ferrone
- C# Game Programming Cookbook for Unity 3D (English Edition), Jeff W. Murray, 2e Édition -