

Tools and 3D modeling techniques



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):** 24
- > **ECTS:** 2
- > **Teacher(s):** Paul Richard

> Assessment:

- Continuous assessment
- Final exam

> Teaching methods:

- | | | |
|--|----------|-------------------------------------|
| <input type="checkbox"/> Lecture course | hours | <input type="checkbox"/> Case study |
| <input type="checkbox"/> Tutorial course | hours | <input type="checkbox"/> Project |
| <input checked="" type="checkbox"/> Practical work | 24 hours | |

COURSE DESCRIPTION

Modelling and exploitation of a 3D model (3DS Max)

1. Modeling and optimization of a 3D object
2. Texture mapping and UV mapping
3. Export and use a 3D model under Unity3D

Modelling, animation and exploitation of a 3D character

1. Modelling under 3DS max of a 3D character
2. Animation under 3DS max of a 3D character
3. Export, import and use a 3D character in Unity3D

OBJECTIVES

Students will:

- know the modeling tools used in 3D computer graphics.
- understand the basic problems and techniques of 3D modelling and animation. Export and use of static or animated models in the Unity3D environment.
- be able to model and export a static 3D model for Unity3D
- be able to animate, export and exploit a 3D character under Unity3D

PREREQUISITES

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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 F licia (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  dition -