

Course guide 804394 - E3D - 3D Scenarios

| | Last modified: 04/09/2024 | | |
|------------------------|---|--|--|
| Unit in charge: | Image Processing and Multimedia Technology Centre | | |
| Teaching unit: | 804 - CITM - Image Processing and Multimedia Technology Centre. | | |
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| Degree: | BACHELOR'S DEGREE IN DESIGN, ANIMATION AND DIGITAL ART (Syllabus 2023). (Compulsory subject). | | |
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| Academic year: 2024 | ECTS Credits: 6.0 Languages: Catalan | | |
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| LECTURER | | | |
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| Coordinating lecturer: | Ripoll Tarre, Marc | | |
| Otheres | | | |
| Others: | Ripoli Tarre, Marc | | |
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| TEACHING METHOD | OLOGY | | |

LEARNING OBJECTIVES OF THE SUBJECT

- Carry out the design, modeling, texturing, lighting and rendering of 3D scenarios, to interact with objects or virtual characters.

STUDY LOAD

| Туре | Hours | Percentage |
|--------------------|-------|------------|
| Hours medium group | 18,0 | 12.00 |
| Hours large group | 30,0 | 20.00 |
| Self study | 90,0 | 60.00 |
| Guided activities | 12,0 | 8.00 |

Total learning time: 150 h

CONTENTS

| Game Design | |
|------------------------|--|
| Description: | |
| Basic concepts | |
| Mechanics vs themes | |
| Rewards and challenges | |
| Fun | |
| Full-or-part-time: 10h | |
| Theory classes: 2h | |
| Practical classes: 2h | |
| Self study : 6h | |
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Level design

Description:

Planning and preproduction Objectives, obstacles and progression Game flow Map layout Game mechanics Player experience Storytelling

Full-or-part-time: 10h

Theory classes: 2h Practical classes: 2h Self study : 6h

Architecture and visualization

Description:

Urbanism and Territory Architectural proportions Historical periods Projection systems Perspective and camera

Full-or-part-time: 10h

Theory classes: 2h Practical classes: 2h Self study : 6h

Creation of 3D assets

Description: Asset design Carving Retopology Map extraction

Full-or-part-time: 10h Theory classes: 2h Practical classes: 2h Self study : 6h

Texturing 3D assets

Description: Shading techniques PBR Realistic texture

Full-or-part-time: 10h Theory classes: 2h Practical classes: 2h Self study : 6h



Photogrammetry

Description: Concept of photogrammetry Scan 3D objects

Full-or-part-time: 10h Theory classes: 2h Practical classes: 2h Self study : 6h

3D engine

Description: Level edit. Unity 3d. Real-time render.

Full-or-part-time: 10h Theory classes: 2h Practical classes: 2h Self study : 6h

Exteriors

Description: Level Design of exteriors Terrains and landscapes Vegetation and billboards Atmosphere and effects

Full-or-part-time: 10h Theory classes: 2h Practical classes: 2h Self study : 6h

Interiors

Description: Level Design of interiors Modularity Collision model Creating atmospheres

Full-or-part-time: 10h Theory classes: 2h Practical classes: 2h Self study : 6h



3D Lighting

Description: Shaders Dinamic lightingh Direct and indirect illumination Light baking

Full-or-part-time: 10h Theory classes: 2h Practical classes: 2h Self study : 6h

Lightmaps

Description: Lightmaps Lightprobes Ambient occlusion

Full-or-part-time: 10h Theory classes: 2h Practical classes: 2h Self study : 6h

Scenarios and Virtual Reality

Description: Virtual reality Augmented reality Space and proportions VR

Full-or-part-time: 10h Theory classes: 2h Practical classes: 2h Self study : 6h

Scenarios for Postproduction

Description: Real space vs. virtual space Importance of the storyboard Integration of digital elements

Full-or-part-time: 10h Theory classes: 2h Practical classes: 2h Self study : 6h



Optimization and rendering

Description: Optimizations Export Render engine Postprocessing

Full-or-part-time: 20h Theory classes: 4h Practical classes: 4h Self study : 12h

GRADING SYSTEM

EXAMINATION RULES.

Irregular actions that can lead to a significant variation in the grade of one or more students constitute a fraudulent performance of an assessment act. This action entails the descriptive qualification of suspension and a numerical grade of 0 in the overall ordinary assessment of the subject, without the right to re-evaluation.

If the teachers have indications of the use of AI tools not allowed in the assessment tests, they can call the students involved to an oral test or a meeting to verify their authorship.

BIBLIOGRAPHY

Complementary:

- Demers, Owen. Digital texturing & painting . [S.I.] : New Riders, cop. 2002. ISBN 0735709181.

- Kerr, Norman. Techniques of photographic lighting . New York : American Photographic Book Publishing, 1982. ISBN 0817460241.

- Ahearn, Luke. 3D game textures [Recurs electrònic] : create professioal game art using Photoshop . 3rd ed. Waltham, MA : Focal Press, 2012. ISBN 9780240820774.