

Course guide

804487 - MA3DAC - Modelling and Advanced 3D Animation

Last modified: 18/05/2026

Unit in charge:	Image Processing and Multimedia Technology Centre	
Teaching unit:	804 - CITM - Image Processing and Multimedia Technology Centre.	
Degree:	BACHELOR'S DEGREE IN VIDEO GAME DESIGN AND DEVELOPMENT (Syllabus 2014). (Optional subject). BACHELOR'S DEGREE IN DIGITAL DESIGN AND MULTIMEDIA TECHNOLOGIES (Syllabus 2023). (Optional subject).	
Academic year: 2026	ECTS Credits: 6.0	Languages: Catalan, Spanish

LECTURER

Coordinating lecturer:	Serrano Recuero, Josep
Others:	Ripoll Tarré, Marc Serrano Recuero, Josep

PRIOR SKILLS

Basic 3d modeling and texturing.
Basic 3d animation.

TEACHING METHODOLOGY

Exhibition and learning of new content through theory, references and practical cases.
Participatory class where to develop activities for problem solving and content discussion.
Practical work where to apply and experiment with the contents seen in class. Exercises will be proposed to work during the week and improve the experience necessary to master 3d design tools.

LEARNING OBJECTIVES OF THE SUBJECT

Skills

Apply advanced modelling and animation techniques, post-production and visual effects for the production of digital content and products.

To understand the theory of character design.

To plan game characters adapting to every possible mechanic, aesthetic and narrative combinations.

To understand the work methodology used by professional videogame studios and analyze the importance of teamwork.

To know commonly used techniques applied to character design.

To strengthen the modeling, texturing and animation basics.

To use the subject learning to create professional high quality 3d characters.

To do the exercises proposed in class applying the correct structure, presentation and planification and maintaining a good orthographic and grammatical level.

STUDY LOAD

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

Total learning time: 150 h

CONTENTS

Design

Description:

Game design
Character design
Level design
Concept art and references

Full-or-part-time: 23h

Practical classes: 8h

Self study : 15h

Modeling and texturing

Description:

Polygonal modeling
Digital sculpture
Retopology and UVs

Full-or-part-time: 42h

Practical classes: 16h

Self study : 26h

Level of game

Description:

Modelado y texturado del nivel de juego.
Entornos en VR (realidad virtual).

Full-or-part-time: 22h

Practical classes: 8h

Guided activities: 6h

Self study : 8h

Animation

Description:

Rigging
Skinning
Character animation
Mocap

Full-or-part-time: 43h

Practical classes: 16h

Self study : 27h

Portfolio

Description:

Presentation of treballs
Online platforms
Techniques and councils

Specific objectives:

Create a portfolio with professional quality

Full-or-part-time: 20h

Practical classes: 6h

Self study : 14h

ACTIVITIES

Character modeling

Description:

Model and sculpt a 3d character from a conceptual design.

Specific objectives:

Understand and apply the techniques and methodologies used in production to make fully functional 3d characters with a professional finish.

Delivery:

It will be delivered to the Atenea campus following the documents present on campus and provided by the professor.

Full-or-part-time: 20h

Guided activities: 20h

Character animation

Description:

Learn and practice new character-centered 3d animation techniques.

Specific objectives:

Understand and apply the techniques and methodologies used in production to rig and animate 3d characters with a professional finish.

Delivery:

It will be delivered to the Atenea campus following the documents present on campus and provided by the professor.

Full-or-part-time: 10h

Self study: 10h

Character Texturing

Description:

Texturing a 3d character from a conceptual design.

Specific objectives:

Understand and apply the techniques and methodologies used in production to make fully functional 3d characters with a professional finish.

Delivery:

It will be delivered to the Atenea campus following the documents present on campus and provided by the professor.

Full-or-part-time: 5h

Practical classes: 5h

GRADING SYSTEM

4 practices:

4 practice exercises with a weight of 15% of the final grade of the subject per exercise.

Final exam:

A Final Exam with a weighting of 30% of the final grade of the subject.

Participation and learning attitude: 10% of the grade of the subject.

Irregular actions that may lead to a significant variation in the grade of one or more students constitute a fraudulent performance of an evaluation act. This action will lead to a descriptive grade of fail and a numerical grade of 0 for the ordinary global assessment of the subject, without the right to re-evaluation.

If the teachers have evidence of the use of AI tools that are not permitted in the assessment tests, they may summon the students involved to an oral test or a meeting to verify the authorship.

EXAMINATION RULES.

Some of the exercises can be done during the classes with the teacher of the subject. Students will also have to dedicate time to work independently (outside of hours), to perform the exercises. To do so, follow the instructions specified in the working document.

The exercise once completed will be deposited in the Virtual Campus in the delivery of the classroom of the section in the corresponding date, will only be taken into account to assess those exercises delivered before 24:00 hours of the deadline.

The documents must be completed, following the instructions, especially with regard to the names of the files. The correct management of the documentation provided is an aspect of the skills to be acquired and part of the evaluation.



BIBLIOGRAPHY

Basic:

- Demers, Owen. Digital texturing & painting . [S.l.] : New Riders, cop. 2002. ISBN 0735709181.
- Ahearn, Luke. 3D game textures: create professional game art using Photoshop [on line]. 3rd ed. Waltham, MA: Focal Press, 2012 [Consultation : 06/05/2022]. Available on : <https://www.sciencedirect-com.recursos.biblioteca.upc.edu/book/9780240820774/3d-game-textures>. ISBN 9780240820774.
- Williams, Richard. The Animator's survival kit. Expanded ed. London: Faber and Faber, 2009. ISBN 9780571238347.
- Thomas, Frank; Johnston, Ollie. The illusion of life: Disney animation. New York: Hyperion, 1995. ISBN 0786860707.
- Birn, Jeremy. Digital lighting & rendering. Berkeley, CA: New Riders, cop, 2014.

RESOURCES

Other resources:

- <https://creative.pluralsight.com>. Videotutorials online
- <https://www.cgtrader.com/>. Recurs
- <http://www.cgchannel.com/>. Recurs
- <http://www.zbrushcentral.com/>. Recurs