Course guide

804266 - MA3DAC - Modeling and Advanced 3D Animation

Unit in charge: Image Processing and Multimedia Technology Centre
Teaching unit: 804 - CITM - Image Processing and Multimedia Technology Centre.

Degree: BACHELOR’S DEGREE IN MULTIMEDIA STUDIES (Syllabus 2009). (Optional subject).
         BACHELOR’S DEGREE IN VIDEO GAME DESIGN AND DEVELOPMENT (Syllabus 2014). (Optional subject).

Academic year: 2022    ECTS Credits: 6.0    Languages: Spanish

LECTURER

Coordinating lecturer: Navales Farreras, Ismael

Others: Ripoll Tarré, Marc
         Navales Farreras, Ismael

PRIOR SKILLS

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

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
CEVJ 7. Master the wide range of professional tools in the sector for developing all kinds of digital content.
CEVJ 8. Design, model, texturise and animate 2D and 3D objects, characters and scenes for inclusion in digital projects, audiovisual
         sequences and video games.
CEVJ 9. Apply advanced modelling and animation, post-production and special effects techniques to the creation of digital content
         and/or its inclusion in a video game project.

Transversal:
04 COE N2. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 2. Using strategies for preparing and giving oral presentations.
         Writing texts and documents whose content is coherent, well structured and free of spelling and grammatical errors.
07 AAT. SELF-DIRECTED LEARNING. Detecting gaps in one’s knowledge and overcoming them through critical self-appraisal. Choosing
         the best path for broadening one’s knowledge.

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

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Hours</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours medium group</td>
<td>30,0</td>
<td>20.00</td>
</tr>
<tr>
<td>Self study</td>
<td>90,0</td>
<td>60.00</td>
</tr>
<tr>
<td>Hours large group</td>
<td>18,0</td>
<td>12.00</td>
</tr>
<tr>
<td>Guided activities</td>
<td>12,0</td>
<td>8.00</td>
</tr>
</tbody>
</table>

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

**Related competencies:**
- CEVJ 7. Master the wide range of professional tools in the sector for developing all kinds of digital content.
- 07 AAT. SELF-DIRECTED LEARNING. Detecting gaps in one’s knowledge and overcoming them through critical self-appraisal. Choosing the best path for broadening one’s knowledge.
- 04 COE N2. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 2. Using strategies for preparing and giving oral presentations. Writing texts and documents whose content is coherent, well structured and free of spelling and grammatical errors.

**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.

**Related competencies:**
- CEVJ 9. Apply advanced modelling and animation, post-production and special effects techniques to the creation of digital content and/or its inclusion in a video game project.
- CEVJ 7. Master the wide range of professional tools in the sector for developing all kinds of digital content.
- CEVJ 8. Design, model, texturise and animate 2D and 3D objects, characters and scenes for inclusion in digital projects, audiovisual sequences and video games.

**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.

**Related competencies:**
- CEVJ 9. Apply advanced modelling and animation, post-production and special effects techniques to the creation of digital content and/or its inclusion in a video game project.
- CEVJ 8. Design, model, texturise and animate 2D and 3D objects, characters and scenes for inclusion in digital projects, audiovisual sequences and video games.
- CEVJ 7. Master the wide range of professional tools in the sector for developing all kinds of digital content.

**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.

Related competencies:
CEVJ 9. Apply advanced modelling and animation, post-production and special effects techniques to the creation of digital content and/or its inclusion in a video game project.
CEVJ 7. Master the wide range of professional tools in the sector for developing all kinds of digital content.
CEVJ 8. Design, model, texture and animate 2D and 3D objects, characters and scenes for inclusion in digital projects, audiovisual sequences and video games.

Full-or-part-time: 5h
Practical classes: 5h

GRADING SYSTEM

3 practices:
1 practice exercise with a weighting of 15% of the final grade of the subject.
1 practice exercise with a weighting of 15% of the final grade of the subject.
1 practice exercise with a weighting of 30% of the final grade of the subject.

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.

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:
RESOURCES

Other resources: