Course guide
804248 - A3D - 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 VIDEO GAME DESIGN AND DEVELOPMENT (Syllabus 2014). (Compulsory subject).
Academic year: 2023  ECTS Credits: 6.0  Languages: Catalan, English

LECTURER
Coordinating lecturer: Ripoll, Marc
Others: Ripoll, Marc
Navales, Ismael

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
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.

Transversal:
05 TEQ. TEAMWORK. Being able to work as a team player, either as a member or as a leader. Contributing to projects pragmatically and responsibly, by reaching commitments in accordance to the resources that are available.
04 COE N3. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.
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

Learning of new contents through theory, references and practical examples.
Participative classroom where to resolve problems and discuss contents.
Practical exercises to apply and experiment with the contents of the course. They will be used to work during the week and improve the skills to master the 3d design tools and techniques.

LEARNING OBJECTIVES OF THE SUBJECT

To understand the theory of animation.
To plan animations 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.
Know the most important techniques in 3d animation.
To use the subject learning to create professional high quality character animations.
Represent character emotion through facial expressions and vocalization.
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 large group</td>
<td>18.0</td>
<td>12.00</td>
</tr>
<tr>
<td>Guided activities</td>
<td>10.0</td>
<td>6.67</td>
</tr>
<tr>
<td>Hours medium group</td>
<td>32.0</td>
<td>21.33</td>
</tr>
<tr>
<td>Self study</td>
<td>90.0</td>
<td>60.00</td>
</tr>
</tbody>
</table>

**Total learning time:** 150 h

CONTENTS

**Animation**

**Description:**
- Animation concepts
- Playback speed
- Keyframes
- Animation curves

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**Full-or-part-time:** 26h
- Theory classes: 3h
- Practical classes: 7h
- Guided activities: 1h
- Self study: 15h
Rigging and Skinning

Description:
Setup
Joints
Inverse kinematics
Skinning

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Full-or-part-time: 41h 20m
Theory classes: 5h
Practical classes: 8h 20m
Guided activities: 3h
Self study: 25h

Character animation

Description:
References and acting
Animation concepts with characters
Motion capture
Facial animation

Related competencies:
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Theory classes: 5h
Practical classes: 8h 20m
Guided activities: 3h
Self study: 25h
# Techniques

**Description:**
- Retargeting
- Scripting
- Physics
- Non Linear animation

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- Theory classes: 5h
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## ACTIVITIES

### Exercice 1

**Description:**
To create a functional rig for a character and adjust the skin until getting a ready to animate character.

**Specific objectives:**
To practice and better understand the rigging tools and techniques applied to characters.

**Material:**
- Autodesk Maya

**Delivery:**
The exercice will be uploaded to an Àgora folder specified by the professor and saved as a Maya scene with the full name of the student.

**Related competencies:**
- 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.
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**Full-or-part-time: 10h**
- Self study: 10h
Exercice 2

Description:
Design the animations of a character and create the basic poses for the integration into a videogames.

Specific objectives:
To animate a character, designing his actions.

Material:
Autodesk Maya

Delivery:
The exercice will be uploaded to an Àgora folder specified by the professor and saved as a Maya scene with the full name of the student.

Related competencies:
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Full-or-part-time: 20h
Guided activities: 5h
Self study: 15h

GRADING SYSTEM

2 exercices
1 practice with a percentage of 15% of the final evaluation.
1 practice with a percentage of 30% of the final evaluation.
1 midterm exam with a percentage of 15% from the final evaluation.
1 final exam with a percentage of 30% from the final evaluation.

Learning attitude and learning: 10% of the final evaluation.

Revaluation exam: possibility to access the revaluation exam to revaluate the two previous exams (45% of the final evaluation). Only students that didn't pass the course can access the revaluation exam.

EXAMINATION RULES.

Some of the exercices can be worked in classroom with professors, however, students must work in an autonomous way to finish their exercices. They should follow the instructions given in the exercice document.
BIBLIOGRAPHY

Basic:

Complementary:

RESOURCES

Hyperlink: