804248 - A3D - 3D Animation

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 exercices 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 exercices proposed in class applying the correct structure, presentation and planification and maintaining a good orthographic and grammatical level.
## Study load

<table>
<thead>
<tr>
<th>Total learning time: 150h</th>
<th>Hours large group: 18h</th>
<th>12.00%</th>
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<tbody>
<tr>
<td></td>
<td>Hours medium group: 32h</td>
<td>21.33%</td>
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<tr>
<td></td>
<td>Hours small group: 0h</td>
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<tr>
<td></td>
<td>Guided activities: 10h</td>
<td>6.67%</td>
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<tr>
<td></td>
<td>Self study: 90h</td>
<td>60.00%</td>
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### Content

<table>
<thead>
<tr>
<th>Animation</th>
<th>Learning time: 26h</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 3h</td>
</tr>
<tr>
<td></td>
<td>Practical classes: 7h</td>
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<tr>
<td></td>
<td>Guided activities: 1h</td>
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<tr>
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<td>Self study: 15h</td>
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**Description:**
- Animation concepts
- Playback speed
- Keyframes
- Animation curves

<table>
<thead>
<tr>
<th>Rigging and Skinning</th>
<th>Learning time: 41h 20m</th>
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<tbody>
<tr>
<td></td>
<td>Theory classes: 5h</td>
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<tr>
<td></td>
<td>Practical classes: 8h 20m</td>
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<td></td>
<td>Guided activities: 3h</td>
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<tr>
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<td>Self study: 25h</td>
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**Description:**
- Setup
- Joints
- Inverse kinematics
- Skinning

<table>
<thead>
<tr>
<th>Character animation</th>
<th>Learning time: 41h 20m</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Theory classes: 5h</td>
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<tr>
<td></td>
<td>Practical classes: 8h 20m</td>
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<tr>
<td></td>
<td>Guided activities: 3h</td>
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<tr>
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<td>Self study: 25h</td>
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</tbody>
</table>

**Description:**
- References and acting
- Animation concepts with characters
- Motion capture
- Facial animation
Planning of activities

Exercice 1

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

**Support materials:**
Autodesk Maya

**Descriptions of the assignments due and their relation to the assessment:**
The exercise will be uploaded to an Agora folder specified by the professor and saved as a Maya scene with the full name of the student.

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

<table>
<thead>
<tr>
<th>Hours</th>
<th>10h</th>
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<tbody>
<tr>
<td>Self study</td>
<td>10h</td>
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</tbody>
</table>

Exercice 2

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

**Support materials:**
Autodesk Maya

**Descriptions of the assignments due and their relation to the assessment:**
The exercise will be uploaded to an Agora folder specified by the professor and saved as a Maya scene with the full name of the student.

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

<table>
<thead>
<tr>
<th>Hours</th>
<th>20h</th>
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</thead>
<tbody>
<tr>
<td>Guided activities</td>
<td>5h</td>
</tr>
<tr>
<td>Self study</td>
<td>15h</td>
</tr>
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</table>
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**Qualification system**

2 exercises
1 practice with a percentage of 15% of the final evaluation.
1 practice with a percentage of 30% of the final evaluation.

1 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 assignature can access the revaluation exam.

**Regulations for carrying out activities**

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 exercise document.

**Bibliography**

**Basic:**


**Complementary:**


**Others resources:**

**Hyperlink**

www.thegnomonworkshop.com
Resource

www.digitaltutors.com
Resource

http://area.autodesk.com
Resource

http://www.cgsociety.org/
Resource