Course guide
804474 - A3D - 3D Animation

Last modified: 05/09/2024

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

Degree: BACHELOR'S DEGREE IN DIGITAL DESIGN AND MULTIMEDIA TECHNOLOGIES (Syllabus 2023). (Compulsory subject).

Academic year: 2024 **ECTS Credits:** 6.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: Escuder I Peralba, Clàudia

Others:

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

Knowledge
Identify the basic concepts and procedures involved in 3D animation, as well as the application of fundamental concepts of physics and mathematics to animation.
Show knowledge of the planning and creation phases of a 3D animated piece in the context of the multimedia field.
Recognise relevant facts and events in relation to the history of animation.

Skills
Design, model and texture 3D characters, objects and scenarios to be applied to multimedia products.
Analyse the movements of objects, humans and animals, in order to subsequently animate 3D virtual objects, characters or animals by means of computer animation techniques.
Using basic procedures, techniques, technologies and computer graphics programmes, selecting the most appropriate tools to apply animation and composition of 3D objects in multimedia projects.

STUDY LOAD

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

Total learning time: 150 h

CONTENTS

Introduction to 3D animation

Description:
1.1. Presentation of the subject
1.2. Evaluation system

Full-or-part-time: 10h
Practical classes: 4h
Self study : 6h

2. History of animation

Description:
2.1. What is animation?
2.2. Retinal persistence
2.3. Uncanny Valley
2.4. History of animation

Full-or-part-time: 42h
Practical classes: 12h
Self study : 30h

3. Introduction to Maya

Description:
3.1. Project Window and Set Project
3.2. Workspaces
3.3. Status Line
3.4. Shelf
3.5. Panel Toolbar and Outliner
3.6. Display and Viewer Settings
3.7. Channel box
3.8. Atribute Editor
3.9. Modeling Toolkit
3.10. Maya Marking Menus and basic Shortcuts

Full-or-part-time: 36h
Practical classes: 16h
Self study : 20h

4. The principles of animation

Description:
4.1. Squash & Stretch
4.2. Anticipation
4.3. Staging
4.4. Straight Ahead
4.5. Follow Through & Overlapping action
4.6. Slow In & Slow Out
4.7. Arcs
4.8. Secondary Action
4.9. Timing
4.10. Exaggeration
4.11. Solid Drawing
4.12. Appeal

Full-or-part-time: 34h
Practical classes: 4h
Self study : 30h

5. 3D animation workflow

Description:
5.1. Pre-Production of 3D animation
5.2. 3D animation production
5.3. Post-Production of 3D animation
5.4. Facial Expressions
5.5. Time Slider
5.6. Animation tricks
5.7. Departments other than 3D animation
5.8. Type of 3D animation
5.9. Designing characters for 3D animation
5.10. RIG
5.11. RIG Drivers
5.12. Character Sets
5.13. Matching
5.14. Graph Editor
5.15. Dope Sheet

Full-or-part-time: 16h
Practical classes: 4h
Self study : 12h

6. Finishing

Description:
6.1. Chambers
6.2. Lights
6.3. Render

Full-or-part-time: 12h
Practical classes: 8h
Self study : 4h

GRADING SYSTEM

The evaluation of the subject is carried out in the following way:
-40% Evaluation of the understanding of concepts through exercises carried out in the classroom and at home.
-20% the partial exam is assessed by means of a test in the classroom.
-30% final exam is assessed through a classroom presentation and a final submission of a homework exercise.
-10% class participation and attendance.
For students with a grade lower than 5 and higher than 0 (no-shows are excluded), there is the possibility of a re-evaluation exam.
The re-evaluation mark can only replace the mark obtained in the partial exam, therefore, it will correspond to 20% of the final mark.
In case of re-evaluation, the final mark obtained cannot be higher than 5.

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.

Practical exercises
The practical exercises must be done following the instructions given by the teacher in the corresponding class.
The evaluation of the practicals does not only involve the resolution of the proposed exercises, but also the procedure followed by the student.
Any incident that does not allow the student to solve the practical within the indicated period must be communicated to the teacher.

Exams
The partial exam and the final exam of the course are held in the laboratory with computers.
In the case of the partial exam, an activity provided by the teacher in the classroom must be solved. The proposed activity refers both to the theoretical content of the subject and to the exercises solved in the different practicals.
In the case of the final exam, the defence of the last practical must be presented and the exercise carried out must be handed in.

BIBLIOGRAPHY

Basic:
- Thomas, F., & Johnston, O.. The illusion of life : Disney animation. 1995. ISBN 0786860707.
- Williams, Richard. The Animator's Survival Kit. ISBN 978-0571202287.
- Kerlow, Isaac V. The art of 3-D: computer animation and imaging. 2a. Wiley, 2000. ISBN 9780471360049.
- Maestri, George. Creación digital de personajes animados. Madrid: Anaya Multimedia, 2000. ISBN 9788441509931.
- Birn, Jeremy. Tecnicas de iluminación y render. Madrid: Anaya Multimedia, 2001. ISBN 8441510946.

Complementary:
- Draper, Pete. Deconstructing the Elements with 3ds Max. Focal Press, ISBN 9780240521268.

RESOURCES

Other resources:
http://www.cgchannel.com/ />http://www.3dyanimacion.com/ />http://www.computerarts.co.uk/tutorials/3d__and__animation /
https://www.youtube.com/user/Autodesk />https://www.twitch.tv/prattbros/videos?filter=all&sort=time
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