Course guide
804238 - A2D - 2D Animation

Last modified: 13/02/2026

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). (Compulsory subject).

Academic year: 2025   **ECTS Credits:** 6.0   **Languages:** Spanish, English

LECTURER

Coordinating lecturer:	Nea Ehrlich
Others:	Nea Ehrlich Irene Ferrer

PRIOR SKILLS

The 2D animation subject presents the introduction of the animation principles and the context of animation inside the film language. We will work the history of animation and the tools necessary to dominate the bases. This activities will conclude with the creation and animation of videogame characters.

TEACHING METHODOLOGY

The subject will provide three theoretical resources to be able to execute a series of practices that summarize the general role that an animator has within a production. The first will be a cultural documentation on the world of animation, its history and its main figures, as well as weekly recommendations to enrich the global vision of the matter. Each practice also has a theoretical formula to face it easily and finally a practical example by the teacher during class. These practices will receive as much feedback as the student needs before the delivery date.

The total of practices and contents will be summarized in an exam that will work the main aspects worked during the subject.

LEARNING OBJECTIVES OF THE SUBJECT

- To describe the basic concepts and procedures involved in the modeling, texture, lighting and 2D and 3D animation of objects, characters and environments for video games.
- To efficiently use computer programs, composition graphics and animation of objects and 2D and 3D characters.
- To pply computer animation techniques in 2D and 3D animation, implementing mathematical and physical foundations.
- To analyse movement in objects, humans and animals for recreation in 2D and 3D animation.
- To create objects, characters, textures, scenes, visual effects and 2D and 3D animations for inclusion in video game projects.
- To collaborate effectively and responsibly as a member or leader of a team, in interdisciplinary contexts or not, considering the available resources.
- To identify the processes of 2D animation.
- To use the traditional techniques and Cut-Out of 2D animation.

STUDY LOAD

Type	Hours	Percentage
Hours medium group	32,0	21.33
Guided activities	10,0	6.67
Self study	90,0	60.00
Hours large group	18,0	12.00

Total learning time: 150 h

CONTENTS

COURSE INTRODUCTION

Description:
Course presentation, personal and 2D animation history and concept introduction.

Specific objectives:
Teacher introductiona along with his job and course general information.

Full-or-part-time: 7h 30m
Theory classes: 2h 30m
Self study : 5h

INTRODUCTION TO ANIMATION

Description:
- Animation principles
- Animator's job, tools and techniques
- Production pipeline

Full-or-part-time: 50h
Theory classes: 20h
Self study : 30h

INTRODUCTION TO SCREENWRITTING AND STORYBOARD FOR ANIMATION

Description:
- Adventure screenwritting structure for animation.
- Composition and camera movement in Toonboom.
- Storyboard in Toonboom.

Full-or-part-time: 7h 30m
Theory classes: 2h 30m
Self study : 5h

ANIMATION BIBLE CREATION

Description:
Concepts for animation bible creation.

Full-or-part-time: 10h
Theory classes: 5h
Self study : 5h

CHARACTER DESIGN AND RIGGING

Description:
Drawing, color and rigging concepts for character creation in Toonboom.

Full-or-part-time: 25h
Theory classes: 10h
Self study : 15h

VIDEOGAMES CHARACTER ANIMATION

Description:
Advanced character animation for videogames.

Full-or-part-time: 50h
Theory classes: 20h
Self study : 30h

ACTIVITIES

EASY BALL

Description:
Animation of ball moving from on side to the other of the frame, learning de concept of easy in and easy out.
1- 25 drawings of a ball moving from frame 1 to 25 with the same timming.
2- 21 drawings of a ball moving from frame 1 to 25 with an easy out and easy in.

Full-or-part-time: 1h
Guided activities: 1h

BOUNCING BALL SOLID

Description:
Tradicional animation of a solid ball bouncing in Y until it stops.

Full-or-part-time: 1h
Guided activities: 1h

BOUNCING BALL SOFT

Description:
Traditional animation of a soft ball bouncing in X until it stops. It's necessary to apply the concepts of easy in and easy out and squash and stretch.

Full-or-part-time: 2h
Guided activities: 2h

BOUNCING BALL OBSTACLE

Description:
Cut-Out animation of a ball bouncing from a high position until it stops at the bottom through a number of simple obstacles.

Full-or-part-time: 2h
Guided activities: 2h

POSE TO POSE FACE

Description:
Tradicional animation of a simple face looking from one side to the other. It's necessary to apply the easy in and easy out, squash and stretch, timming, breackdown and inbetween concepts.

Full-or-part-time: 2h
Guided activities: 2h

POSE TO POSE BODY

Description:
Mixed animation of a body changing his weight from on leg to the other applying the concepts from the last pose to pose exercise.

Full-or-part-time: 3h
Guided activities: 3h

JUMP

Description:
Traditional animatin of a character jumping in X applying the pose to pose technique.

Full-or-part-time: 3h
Guided activities: 3h

WALKING CYCLE

Description:
Traditional animation of a character walking as a Richard Williams cycle.

Full-or-part-time: 3h
Guided activities: 3h

PROJECT BIBLE

Description:
Bible creation in groups.
1- Cover
2- Index
3- Sinopsis
4- Screenplay structure
5- Moodboard
6- Character design
7- BG design
8- Storyboard for one scene
9- Simple animation of the scene

Full-or-part-time: 12h
Guided activities: 12h

CHARACTER CREATION

Description:
Design and rigging for a Toonboom character

Full-or-part-time: 6h
Guided activities: 6h

CHARACTER ANIMATION IDLE

Description:
Cut-Out animation of a videogame IDLE

Full-or-part-time: 3h
Guided activities: 3h

CHARACTER ANIMATION WALKING

Description:
Cut-Out animation of a walking videogame character

Full-or-part-time: 3h
Guided activities: 3h

CHARACTER ANIMATION STRIKE

Description:
Cut-Out animation of a videogame character stricke

Full-or-part-time: 3h
Guided activities: 3h

CHARACTER ANIMATION FINAL

Description:
Cut-Out animation of a videogame character linking animations.

Full-or-part-time: 4h
Guided activities: 4h

GRADING SYSTEM

- Practical exercises 45%
- Partial exam 15%
- Animation theoretical project 15%
- Final exam 15%
- Attitude 10%

Students who fail the entire course will have the chance to take the reevaluation exam. The mark of this exam will replace the mark of the partial and final exams, and the theoretical project. In case of passing the course, the maximum final mark will be 5.

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

If the lecturers have indications of the use of AI tools not allowed in the evaluation tests, they may summon the students concerned to an oral test or a meeting to verify the authorship.

BIBLIOGRAPHY

Basic:
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- Commodore 64: a visual compendium. Bitmap Books, 2016. ISBN 9780993012983.
- Méndez, S. 1x1: pixel-based illustration & design. Mark Batty, 2004. ISBN 9780972563628.
- Sinclair, C. Sinclair ZX spectrum: a visual compendium. Bitmap Books, 2015. ISBN 9780993012921.
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- Williams, R. The animator's survival kit: a manual of methods, principles and formulas for classical, computer, games, stop motion and internet animators. 2nd ed. London: Faber & Faber, 2012. ISBN 9780865478978.
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- Thomas, F.; Johnston, O. The illusion of life: Disney animation. New York: Hyperion, 1995. ISBN 0786860707.
- Hamm, J. Cartooning the head & figure. New York: Perigee Books, 1982. ISBN 9780399508035.
- Pagès, Maria. 50 principios fundamentales de la animación : 2D, 3D y videojuegos . Primera edición. Barcelona : Iniciativa Digital Politècnica. Oficina de Publicacions Acadèmiques Digitals de la UPC, septiembre de 2024. ISBN 9788410008762.