



ACADEMIC PROGRAM

3D CHARACTER ANIMATION II

B.F.A. IN ANIMATION

MODALITY: ON CAMPUS

ACADEMIC YEAR: 2023-2024

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|----------------------------|-----------------------------------------------------------|
| Name of the course: | 3D Character Animation II |
| Degree : | Animation |
| Location: | Centro Universitario de Tecnología y Arte Digital |
| Area: | Animation |
| Year: | 3º |
| Teaching period: | 2 |
| Type: | OB |
| ECTS credits: | 6 |
| Teaching modality: | On campus |
| Language: | English |
| Lecturer / Email | Jose Luis De Lucas Palacios / jose.lucas@u-tad.com |
| Web page: | http://www.u-tad.com/ |

SUBJECT DESCRIPTION

Area description

The animation subject is oriented to enable students to acquire the skills that will allow them to convey emotions through the movement and performance of the characters using the 3D animation technique and acquiring the knowledge of other experimental animation techniques. They will apply the concepts of anatomy and mechanics of human body movement and the principles of traditional animation to 3D and experimental animation, transferring them to actions of increasing complexity, both in the physical simulation of movement and in the transmission of emotions through the attitude and gestures of the character.

Subject description

3D Character Animation (II) is an extension of the knowledge acquired in the previous animation courses, providing new content for the animation of biped characters in 3D. The course is directly related to all the previous processes before the animation, such as modeling, setup and rigging, and should be able to provide the characters created previously with the credible movement necessary for any film or video game production. The student will be able to create animations in different styles that will allow him to take a job in a film production, as well as in the video game and advertising market.

COMPETENCIES AND LEARNING OUTCOMES

Competencies

BASIC AND GENERAL

CB1 - That students have demonstrated possession and understanding of knowledge in an area of study that builds on the foundation of general secondary education, and is usually at a level that, while relying on advanced textbooks, also includes some aspects that involve knowledge from the cutting edge of their field of study.

CB2 - That students know how to apply their knowledge to their work or vocation in a professional manner and possess the competencies usually demonstrated through the development and defense of arguments and problem solving within their field of study.

CB3 - That students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical issues.

CB4 - Students should be able to convey information, ideas, problems and solutions to both specialized and non-specialized audiences.

CB5 - That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

TRANSVERSALS

CT5 - Demonstrate versatility, flexibility and creativity in the development of projects, activities and works.

SPECIFIC

CE5 - Apply the traditional principles of animation to the digital animation of characters and other elements.

CE19 - Apply different techniques of experimental animation, for the realization of an animation according to the artistic and narrative style sought.

CE3 - Know and represent the anatomy, shape and proportion of the human body.

Learning outcomes

At the end of the degree, the graduate will be able to:

- Recreate the anatomy of the human figure from digital or physical references applied to character animation.
- Apply knowledge of human and animal anatomy to the animation and rigging of human and animal figures in 2D and 3D.
- Reconstruct the anatomy and body mechanics of bipedal characters at the physiological and technical level.
- Master the basic laws of animation in both traditional and digital environments.
- Recreate fluid movements to generate believable animations in characters and objects.
- Reconstruct the anatomy and body mechanics of bipedal characters at physiological and technical level.
- Know experimental and less frequent techniques in the industry such as stop motion, cut out or sand animation to produce original and unexpected results.
- Integrate digital and analog animation techniques in the search for new visual and expressive solutions.

- Generate stop motion animations by using models, rigs, cameras and specific software.
- Generate acting, secondary actions, overlapping and interactions between characters for the representation of emotions in the narrative context.
- Optimize the programming code used in an animation scene using the necessary debugging tools.

CONTENTS

- Advanced physics
- Hands animation
- Acting
- Non verbal language
- Introduction to facial animation
- Animation with curves and shot polishing

SUBJECT SYLLABUS

Theme 1. Pantomime and corporal expression

3.1. Personality

3.2. Change of emotion. The use of "takes "and "Smears".

3.3. Entertainment

3.4. Subtext

Topic 2. Non-verbal language

4.1. The importance of hand gestures

Emotions and facial expressions 4.3.

4.3. Eye darts and Blinks

Asymmetry, contrast and balance 4.4.

Topic 1. Quadrupeds: Walks, Runs, and Jumps

1.1. Video references

1.2. Staging & Posing

1.3. Body Mechanics

1.4. Timing and Spacing

Topic 2. Quadrupeds: Body Mechanics

2.1. Video references

2.2. Lines of action. Types.

2.3. Balance and Balance

2.4. Three-dimensionality

2.5. Basic solid masses, transmission of the movement through the Spina dorsalis.

2.6. Analysis of the locomotion of Horses and Birds.

TRAINING ACTIVITIES AND TEACHING METHODOLOGIES

TRAINING ACTIVITIES

| LEARNING ACTIVITIES | Total hours | Hours of presence |
|-------------------------------------------------------------|-------------|-------------------|
| <i>Theoretical / Expository classes</i> | 20,00 | 20,00 |
| <i>Practical classes</i> | 35,56 | 35,56 |
| <i>Tutorials</i> | 4,44 | 2,22 |
| <i>Independent study and autonomous work of the student</i> | 32,22 | 0,00 |
| <i>Elaboration of work (group or individual)</i> | 53,33 | 0,00 |
| <i>Evaluation Activities</i> | 4,44 | 4,40 |
| TOTAL | 150 | 62,18 |

Teaching methodologies

Expository method or master class

Case method

Problem-based learning

Cooperative or collaborative learning

Inquiry-based learning

Flipped classroom or inverted classroom methodology

Gamification

TEMPORAL DEVELOPMENT

Theme 1-3 weeks

Theme 2- 3 weeks

Theme 3- 4 weeks

Theme 4-4 weeks

Theme 5 -

EVALUATION SYSTEM

| ASSESSMENT SYSTEM | MINIMUM SCORE RESPECT TO THE FINAL ASSESSMENT (%) | MAXIMUM SCORE RESPECT TO THE FINAL ASSESSMENT (%) |
|----------------------------------------------------------------------------------|------------------------------------------------------------|------------------------------------------------------------|
| <i>Assessment of participation in class, exercises or projects of the course</i> | 10 | 25 |
| <i>Assessment of assignments, projects, reports, memos</i> | 30 | 60 |
| <i>Objective test</i> | 30 | 60 |

GRADING CRITERIA

| ASSESSMENT SYSTEM | ORDINARY EVALUATION | EXTRAORDINARY EVALUATION |
|----------------------------------------------------------------------------------|------------------------|-----------------------------|
| <i>Assessment of participation in class, exercises or projects of the course</i> | 10 | 10 |
| <i>Assessment of assignments, projects, reports, memos</i> | 60 | 40 |
| <i>Objective test</i> | 30 | 50 |

General comments on the evaluations/assessments

Students must achieve 80% of the learning objectives in order to satisfactorily pass the course.

- Final numerical grade will be from 0 to 10, being a 5 the minimum grade for passing.
- Follow-up of the work in the classroom. It is required the delivery of 100% of the weekly/fortnightly practices or exercises and to have passed the final practice in order to pass the course.
- A practice will be delivered at the end of the course that brings together all the knowledge learned in the course - Global evaluation of the learning process and acquisition of skills and knowledge.
- In the extraordinary convocation, the final practical must be handed in, which will be worth 100% of the grade. It will be delivered both the video and the scene with which it is worked. You will have to provide both the video of the practice and the original files (maya scene). You may be called for consultation and review

of how the exercise was done or ask for a modification, and in case of omission or reasonable doubt, an external review will be requested by the academic coordination and the publication of these notes will be reserved until a consensual decision is reached.

LIST OF REFERENCES (BOOKS, PUBLICATIONS, WEBSITES):

Basic:

Cantor, Jeremy & Valencia, Pepe (2004): Inspired 3D short film production.

Kerlow, Isaac (2009): The Art of 3D: Computer Animation and Effects.

Bibliografía recomendada:

Stanchfeld ,Walt.Gesture Drawinn or the Animaton.

Muybridge, Eadweard. Horses and Other Animals in Moton.

Takashi Iijima - Action Anatomy - For Gamers, Animators, and Digital Artists.

REQUIRED MATERIALS, SOFTWARE AND TOOLS

Type of classroom

Theory

Materials:

Display - Digital whiteboard, Laptop

Software:

Autodesk Maya, Animbot