

## Creation of Digital Objects

Code: 104756  
ECTS Credits: 6

2024/2025

Degree	Type	Year
2503873 Interactive Communication	OT	4

### Contact

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### Teaching groups languages

You can view this information at the [end](#) of this document.

### Prerequisites

It is recommended to bring your own laptop.

### Objectives and Contextualisation

Learn how to use the modeling and illuminate tools of a 3D authoring program (such as Blender) to model objects and present them properly.

### Competences

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values.
- Act within one's own area of knowledge, evaluating sex/gender-based inequalities.
- Apply and integrate knowledge in the fields of social sciences, humanities and engineering to generate complex products and services tailored to citizens' needs.
- Determine and plan the technological infrastructure necessary for the creation, storage, analysis and distribution of interactive multimedia and social-networking products.
- Devise, create, activate and integrate virtual and augmented-reality spaces, characters and objects.
- Display the ability to lead, negotiate and work in a team.
- Introduce changes in the methods and processes of the field of knowledge to provide innovative responses to the needs and demands of society.
- Manage time efficiently and plan for short-, medium- and long-term tasks.
- Search for, select and rank any type of source and document that is useful for creating messages, academic papers, presentations, etc.
- Students must be capable of applying their knowledge to their work or vocation in a professional way and they should have building arguments and problem resolution skills within their area of study.
- Students must be capable of communicating information, ideas, problems and solutions to both specialised and non-specialised audiences.
- Students must develop the necessary learning skills to undertake further training with a high degree of autonomy.

- Students must have and understand knowledge of an area of study built on the basis of general secondary education, and while it relies on some advanced textbooks it also includes some aspects coming from the forefront of its field of study.

## Learning Outcomes

1. Analyse a situation and identify its points for improvement.
2. Communicate using language that is not sexist or discriminatory.
3. Cross-check information to establish its veracity, using evaluation criteria.
4. Design objects that combine aesthetic norms with perfect technical functionality.
5. Distinguish the salient features in all types of documents within the subject.
6. Form part of groups working on virtual-production projects.
7. Identify the specific features of the design, creation, integration and animation of digital objects (2D and 3D) and specific tools from both a conceptual and a practical perspective.
8. Interpret and discuss documents on the main theories on virtual environments.
9. Plan and execute academic projects in the field of virtual environment theory.
10. Present a summary of the studies made, orally and in writing.
11. Propose new methods or well-founded alternative solutions.
12. Propose projects and actions that are in accordance with the principles of ethical responsibility and respect for fundamental rights and obligations, diversity and democratic values.
13. Propose projects and actions that incorporate the gender perspective.
14. Show expertise in operating the relevant computer programmes.
15. Submit course assignments on time, showing the individual and/or group planning involved.
16. Use the virtual spaces created as narrative contexts.
17. Weigh up the risks and opportunities of both one's own and other people's proposals for improvement.

## Content

1. Modeling of low poly objects with Blender.
  2. Low poly Object Mapping with Blender.
  3. High poly with Blender.
  4. Retopology.
  5. Textured by projection.
  6. Rendering methodologies.

## Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Theory sessions	15	0.6	3, 5, 8
Type: Supervised			
Practicum	12	0.48	4, 6, 7, 8, 9, 14, 15, 16
Project	21	0.84	4, 6, 8, 9, 10, 11, 12, 13, 15, 16
Type: Autonomous			

Solving practical exercises	12	0.48	4, 10, 11, 14, 15, 16, 17
Study for theoretical exams	15	0.6	1, 2, 3, 5, 7, 8
Working on project	39	1.56	4, 6, 9, 12, 13, 15, 16, 17

This course places more emphasis on the practical and project parts compared to the theoretical part. The practical and project part will be carried out in supervised working sessions with the professor, work demonstration sessions, and the submission of reports and documentation, as well as individual or group autonomous work by the students.

**THEORY:** Master classes will be given with materials provided in advance through the virtual campus, where theoretical concepts about work methodologies and the use of specific software for the subject (3DSmax, Blender, and Quixel Mixer) will be introduced. Although these are theory classes, a significant part of the session will be dedicated to individually or group-wise solving problems presented by the professor. It is recommended to have a laptop for these sessions.

**PRACTICE:** Practical cases and modeling challenges will be proposed, both individually and in groups of 4 people, where a statement will be provided and the students will have to model and work as a team to present the exercise. In these practical cases, the application of the concepts explained in the theory classes will be required.

**PROJECT:** Midway through the course, students will be given a project proposal consisting of a set of more demanding models for a period of 6 weeks in groups of 4. Students can also propose their own projects. During class sessions, students will engage in supervised group work guided by the professor and will have to make periodic submissions of documentation (reports, control). On the last day of class, each group will make an oral presentation of the project, having previously submitted a report on the work carried out.

**NOTE:** 15 minutes of a class, within the calendar established by the institution/program, will be reserved for students to complete evaluation surveys regarding the performance of the teaching staff and the evaluation of the subject/module.

**Annotation:** Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

## Assessment

### Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Assistance and participation in project sessions	0.1	24	0.96	1, 2, 3, 6, 11, 15, 16, 17
Individual evaluation on theory	0.2	3	0.12	3, 5, 8, 10
Practicum evaluation	0.2	3	0.12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17
Project	0,5	6	0.24	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17

The evaluative activities graded on a scale of 10 are as follows:

- a) Theoretical exam (20% of the final grade)
- b) Practical assignments submission (20% of the final grade)
- c) Practical work (project) completion (40% of the final grade)
- d) Attendance and participation in project sessions (10% of the final grade)
- e) Oral presentation of assignments (10% of the final grade)

For the calculation of the final grade, each evaluative activity must have a score higher than 5.

The grade for recovery activities will be scored up to a maximum of 8. Students who have passed an evaluative activity can participate in recovery assessments, and in that case, the score will be considered a maximum of 10. The highest score from the two evaluations will be taken into account.

In the event that a student engages in any irregularities that may significantly affect the evaluation of an activity, that activity will be graded as 0, regardless of any disciplinary process that may follow. If multiple irregularities occur in the evaluations of the same subject, the final grade for that subject will be 0.

a) THEORETICAL EXAM:

Written exam

b) PRACTICAL ASSIGNMENTS SUBMISSION:

Written exam

c) PROJECT:

The evaluation will also be conducted continuously. The group's reports written after each tutoring session, describing their discussions and agreements, the two written assessments during the semester, and the self-evaluation surveys that each student will conduct on their peers and themselves, will be assessed. In the final week of the course, students will deliver an oral presentation of the project and submit a report on the work performed. Both will be evaluated by three professors of the degree program.

The following INSTRUMENTS and ACTIVITIES will be used for project evaluation:

Evaluation conducted by the professors based on the group's project presentation (quality of work, presentation, submitted report). Group Grade (10). Based on:

STUDENT PORTFOLIO: Document explaining the development of the work, including project planning, meeting minutes, research information, explanation of the implemented application with a small user manual, and conducted tests and trials.

PRESENTATION: Oral presentation using 10-14 slides, covering the developed project and obtained results.

APPLICATION: Source and executable versions (Debug and Release) of the developed application.

REPORTS AND CONTROLS: Presentation of the submitted documentation.

Individual evaluation based on observations made by the tutors during tutoring sessions, considering the attitude, initiative, participation, attendance, and punctuality of the student in group sessions. Individual Grade (10).

Co-evaluation and self-evaluation surveys among group members. Three evaluations will be conducted via Caronte. Peers' Co-evaluation Grade (1).

Oral presentations will be performed in front of students, and groups will evaluate their peers' work, ranking them from the most liked to the least liked. Group Co-evaluation Grade (0.5).

QUALIFICATION INDICATORS FOR THE PROJECT:

The final grade of the subject is calculated in a weighted and overall manner, considering the previous activities and the level of involvement of each group member.

FINAL PROJECT GRADE (10) = (0.6 \* Group Grade (10) + 0.4 \* Individual Grade (10) + Co-evaluation of Peers Grade (0.5) + Group Co-evaluation Grade (0.5))

Each evaluation element must have a score equal to or higher than 5 to count towards the final grade.

EVALUATION CRITERIA:

To pass the subject, a minimum grade of 5 must be obtained in the final grade.

IMPORTANT FOR ALL STUDENTS: The UAB Virtual Campus will be the means of communication for submitting assignments and documentation for the subject. It will also be used for group practicals and projects, and will serve as the urgent communication medium in case of any incidents or absences in face-to-face classes.

SUBJECT GRADE:

The final grade of the subject is calculated in a weighted and overall manner, considering the previous activities and the level of involvement of each group member.

FINAL GRADE (10) = 0.7 \* Project Grade (10) + 0.3 \* Practical Grade (10)

Each evaluation element must have a score equal to or higher than 5 to count towards the final grade.

EVALUATION CALENDAR:

Monitoring of groups and controls: throughout the course.

Portfolio submission, oral presentation, and application by students: during the last week of classes.

This subject doesn't provide for the single assessment system.

## Bibliography

- <https://docs.blender.org/manual/es/2.79/index.html> (manual Blender)
- <https://help.quixel.com/hc/en-us/community/topics> (forum Quixel Mixer)

## Software

Blender

Quixel Mixer

## Language list

Name	Group	Language	Semester	Turn
(PAUL) Classroom practices	61	Spanish	first semester	afternoon
(PLAB) Practical laboratories	61	Spanish	first semester	afternoon
(TE) Theory	6	Spanish	first semester	afternoon