



Eina Centre Universitari  
Fundació Eina  
Disseny Art Barcelona

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## MAQUETES I PROTOTIPS

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Code: 200652

Credits: 6 ECTS

Course: 2

Semester: 1

Typology: Obligatory

Subject: Technology



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## Subject Presentation

### **Brief Description:**

The subject is divided into two areas of knowledge. A theoretical part that defines the basic concepts about the materials and technologies that can be used, and a practical part where the production and post-production techniques of models are developed within the context of design. These two areas are complemented by the drawing and photographing tool, both during the creative process phase and the final presentation.

During the course, two types of models will be worked on, which will help us develop the project and present it respectively:

- Working models, which are made with materials that are quick to handle and easier to execute. They are used as a thinking tool within the design process of a project and allow: to express concepts, to work with spaces, proportions and forms in an effective way, allowing to be critical.
- The presentation models, which are made with more complex materials and techniques and are executed more slowly. They descriptively represent a project that is considered complete in the design phase and is therefore in the executive project phase. It is usually used as a project presentation and communication tool, complementary to renders and panels.

### **Training Objectives:**

- Represent space design project concepts using manual tools, mainly to generate 3D volumes, without neglecting the drawing tool.
- Acquire skills in various techniques and tools to be able to execute models with different visual styles.
- Apply artistic direction to projects, combining manual techniques with digital processes, such as photography, digital post-production and layout, to be able to represent ideas.
- Interpret plans of other projects and subsequent production of the execution plans
- Learn the processes and production time to carry out a project.

- Be able to define a list of materials and budget to carry out the model.



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## Recommendations

Being a completely practical subject, the student is recommended to attend all the classes led by the teaching staff. Unjustified absence on the part of the student can make it difficult to follow the exercises correctly.

## Contents and Methodology

### **Brief Description:**

#### 1. Flat materials: Paper, Cardboard and aluminum sheet (1st evidence - 5%)

- Introduction to working models
- Technique of handling flat materials
- Transformation of a planar element to a volumetric element. Scale: free choice
- Introduction to the world of post-production with Adobe Photoshop
- DINA-3 presentation of a retouched photograph

#### 2. Casting materials: Plaster (2nd evidence - 15%)

- Basic conceptual exercise: Working model
- Design of a volumetric element with geometry guided by the student
- Elaboration of a lost plaster mold to make the production of a piece
- Making the final piece with powder, marble sand and white cement or similar. Scale: free choice
- Reproduction of the piece using the thermoformed tool
- DINA-3 presentation of the concept with photomontage

#### 3. Rigid materials and new technologies: Laser Machine (3rd evidence - 15%)

- Concept of the project: Research of references
- Project design through working models
- Learning to use the laser machine and the tolerance of materials such as wood or methacrylate
- Interpretation of scales
- Executive project: Realization of plans. Scale 1:5
- Techniques for fixing the pieces without the use of chemicals
- Finishing techniques
- Realization of assembly instructions
- DINA-3 presentation of the model with photomontage

#### 4. Intangible materials: Light and other environmental effects (4th evidence - 30%)

- Concept of the project: Research of references

- Project design through story telling
- Realization of mood board of materials
- Work model as a light laboratory: Transmit with lighting, sound, humidity, etc.
- Executive project: Realization of plans and measurements
- Presentation model production. Scale 1:20
- Representation of finishes
- Photography and post-production of the most representative perspectives of the model
- Video presentation of the project to show the effects
- Oral presentation in English

5. Presentation model of a house previously designed in the subject Projects 3 (5th evidence - 35%)

- Project design through working models
- Making a mood board of the materials to be used
- Interpretation of scales
- Pen and cardboard techniques
- Executive project: Realization of plans and measurements
- Representation of the project with a presentation model. Scale 1:30
- Representation of details: Furniture, sanitary elements or vegetation
- Photography and post-production of the most representative perspectives of the model
- DINA-3 presentation of the project

**Teaching methodology:**

- The classes are eminently practical, in which you will learn the basic techniques to reproduce and represent objects and spaces within the context of the design process.
- The technology contents will be those that are specific to the knowledge of the materials and their work processes for the correct manipulation and use for the representation and presentation of the exercises. The constant reference to the project represented will foster the technical knowledge necessary to make the leap to the different scales.
- Students will prepare a presentation for each project where the technical processes used to produce the model must be graphically documented. The portfolio will be consulted by the teacher to monitor the students' work and must be handed in once the project has been physically delivered for evaluation.
- The different techniques of representation (not necessarily models and prototypes) will be evaluated in parallel (photography, post-production, layout of the presentation, artistic direction and oral presentation).

- Some of the students' oral presentations will be held in English.
- The course is designed so that the student acquires creative and productive autonomy as he progresses through the syllabus. It starts with guided projects and ends with projects with creative and technical freedom.
- The subject is mainly practical, but there may be online tutorials.

**Training activities:**

Theoretical classes

ECTS: 10%

Teaching/learning methodology: Lectures and problem solving in large groups

Skills: CE3, CE7, CE8, CE11.

Experimental practices

ECTS: 15%

Teaching/learning methodology: Classroom exercises and experimental demonstrations

Skills: CE3, CE7, CE8, CE11.

workshop work

ECTS: 20%

Independent work: independent or group work for the development of the class exercise. Theoretical, conceptual or research work

Skills: CE3, CE7, CE8, CE11.

workshop work

ECTS: 45%

Independent work: Realization of the project in the representation phase, in working or presentation model

Skills: CE3, CE8, CE11.

Tutorials

ECTS: 10%

Teaching/learning methodology: Follow-up tutorials and correction of independent work

Skills: CE3, CE7, CE8, CE11.

Directed Activities

Master classes

Hours: 8 a.m

Learning outcomes: CE3.1, CE7.3, CE7.4, CE7.5, CE8.4, CE11.4, CE11.5



### Supervised Activities

Approach and resolution of standardized exercises

Hours: 38h

Learning outcomes: CE3.1, CE7.3, CE7.4, CE7.5, CE8.4, CE11.4, CE11.5

Monitoring and partial corrections of independent exercises

Hours: 32h

Learning outcomes: CE3.1, CE7.3, CE7.4, CE7.5, CE8.4, CE11.4, CE11.5

### Autonomous Activities

Development of the exercises outside the classroom.

Hours: 62h

Learning outcomes: CE3.1, CE7.3, CE7.4, CE7.5, CE8.4, CE11.4, CE11.5

Resolution of analysis exercises.

Hours: 10am

Learning outcomes: CE3.1, CE7.3, CE7.4, CE7.5, CE8.4, CE11.4, CE11.5

## Evaluation

### **General evaluation regulations**

A student will be considered "Not Assessable" (NA) if they have not submitted all the learning evidences or have not attended 80% of the classes without justifying their absences. In case of a justified absence, the student must contact the teacher at the time of rejoining to determine the recovery of the activities they missed.

If the student commits any irregularity that may lead to a significant variation in the grade of an evaluation act, that evaluation act will be graded with 0, regardless of the disciplinary process that may be initiated. If several irregularities occur in the evaluation acts of the same subject, the final grade for that subject will be 0.

### **Continuous evaluation system**

The evaluation system of EINA and UAB is a continuous assessment system, the objective of which is for the student to know their academic progress throughout their educational process to allow them to improve it.

The continuous assessment process must include a minimum of three evaluative activities, of two different types, distributed throughout the course, none of which can represent more than 50% of the final grade.

Arriving late to the class or leaving before it ends without justifiable reason will be penalized with 0.5 points on the final mark of the project being developed.

Late deliveries for unexcused reasons will be penalized by opting for a maximum grade of 7 and can only be delivered to the next class. In case of not delivering the work within the established deadline after the fixed delivery, the grade obtained will be Not submitted. In this case there will be no reassessment, except for people who have proof.

The photographs of the subject's projects must be taken in a professional environment, either in the university's photo studio, in a light box, or outside to show a natural landscape.

It is mandatory to attend the classes with the necessary material to carry out the projects. Non-attendance with the material will be validated as an absence.

Evidence of the subject

1. Flat materials: Paper, Cardboard and aluminum sheet (1st evidence - 5%)
2. Casting materials: Plaster (2nd evidence - 15%)
3. Rigid materials and new technologies: Laser Machine (3rd evidence - 15%)
4. Intangible materials: Light and other environmental effects (4th evidence - 30%)
5. Presentation model of a house previously designed in the subject Projects 3 (5th evidence - 35%)

**Review process**

## Competencies and Learning Outcomes

- CE3 Synthesize the knowledge and skills of plastic expression, representation techniques and materials and technologies productive that allow design projects to be proposed and developed.
- CE7 Demonstrate that you understand materials, their qualities, processes and manufacturing costs.
- CE8. Demonstrate basic knowledge of the sciences and auxiliary disciplines of the design project, such as anthropometry and physiology of the visual perception, ergonomics and use evaluation methods, marketing, prospecting technique, etc.
- CT13 Guide design action based on values of respect for the environmental environment and sustainability criteria.

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