

Course guide

320152 - TDOP - Plastic Object Design Workshop

Last modified: 11/04/2025

Unit in charge: Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 702 - CEM - Department of Materials Science and Engineering.

Degree: BACHELOR'S DEGREE IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT ENGINEERING (Syllabus 2010). (Optional subject).

Academic year: 2025 **ECTS Credits:** 6.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: Miguel Sánchez Soto

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

1. DES: Capability for packaging design .
2. DES: Knowledge of design tools for their use in design projects and product redesign.
3. DES: Advanced knowledge in 3D modeling.
4. DES: A good command of the tools related to the design process.

Transversal:

5. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.
6. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.
7. EFFECTIVE USE OF INFORMATION RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

STUDY LOAD

Type	Hours	Percentage
Hours small group	30,0	20.00
Self study	90,0	60.00
Hours large group	30,0	20.00

Total learning time: 150 h



CONTENTS

(ENG) TEMA 1: Introducció al disseny de peces de plàstic

Full-or-part-time: 16h

Laboratory classes: 2h

Guided activities: 4h

Self study : 10h

(ENG) TEMA 2: Introducció a les propietats dels plàstics. Selecció materials

Full-or-part-time: 26h

Theory classes: 8h

Guided activities: 4h

Self study : 14h

(ENG) TEMA 3: Directrius per al disseny optimitzat de peces

Full-or-part-time: 16h

Theory classes: 4h

Guided activities: 2h

Self study : 10h

(ENG) TEMA 4: Tècniques de transformació de materials plàstics: Motlles i matrius

Full-or-part-time: 60h

Theory classes: 12h

Guided activities: 12h

Self study : 36h

(ENG) TEMA 5: Utilització de tècniques CAE de simulació avançades

Full-or-part-time: 16h

Laboratory classes: 4h

Guided activities: 2h

Self study : 10h

(ENG) TEMA 6: Presentació projectes

Full-or-part-time: 16h

Theory classes: 4h

Guided activities: 2h

Self study : 10h

ACTIVITIES

(ENG) PROJECTE EN GRUP D'AVALUACIÓ CONTÍNUADA



GRADING SYSTEM

Delivery 1 (QFD): 20 %
Project delivery 2: 20 %
Project delivery 3: 20%
Project delivery 4: 20%
Final presentation and exposition: 20%

BIBLIOGRAPHY

Basic:

- Menges, G.; Michaeli, W.; Mohren, P. How to make injection molds. 3rd ed. Munich: Hanser, 2001. ISBN 1569902828.
- Gastrow, Hans. Moldes de inyección para plásticos: en 100 casos prácticos. 2ª ed. Barcelona: Plastic Comunicación, 1998. ISBN 848745402X.
- Rao, Natti S.; Schumacher, G. Design formulas for plastics engineers. 2nd ed. Munich: Hanser, 2004. ISBN 3446226745.