

## 340273 - DPMM-D7P02 - Design and Prototypes of Moulds and Matrices

Coordinating unit:	340 - EPSEVG - Vilanova i la Geltrú School of Engineering
Teaching unit:	702 - CMEM - Department of Materials Science and Metallurgy 717 - EGE - Department of Engineering Presentation
Academic year:	2018
Degree:	BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Teaching unit Optional) BACHELOR'S DEGREE IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT ENGINEERING (Syllabus 2009). (Teaching unit Optional)
ECTS credits:	6
Teaching languages:	English

### Teaching staff

Coordinator:	OSCAR MARTIN RAYA
Others:	Joan Josep Aliau Pons Oscar Martín Raya

### Prior skills

3D design knowledges

### Degree competences to which the subject contributes

Specific:

1. D10. Knowledge of beginning of science and material technology to select materials and its processes as well as its repercussion into design, redesign development of products.
2. D.27 Advanced MODELAJE in 3D knowledge.
3. D28. Knowledge of ANIMACION and basic 3D simulation.
6. G5. Mastery of rendering techniques, spatial design, standardization, computer-aided design, knowledge of fundamentals of industrial design.

### Teaching methodology

They will realise an introduction to the dimensioned and designs of moulds and dies. Filling mold simulations will be done with PROCAST. As well as several practical exercises, individually and in group during class hours, all of them real samples.

### Learning objectives of the subject

This course pretends to announce to the future designers some of basic and practical rules that have to apply before realising the product design. They will purchase competitions in the numerical simulation, the design in 3D. This should be able to know the viability of manufacturing a product by its process.

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### Study load

Total learning time: 150h	Hours large group:	30h	20.00%
	Hours medium group:	0h	0.00%
	Hours small group:	15h	10.00%
	Guided activities:	0h	0.00%
	Self study:	105h	70.00%

### Content

(ENG) Tema 1. Introducció als processos d'injecció.

Degree competences to which the content contributes:

(ENG) Tema 2. Disseny de motlles

Degree competences to which the content contributes:

(ENG) Tema 3. Disseny 3D de motlles amb NX

Degree competences to which the content contributes:

(ENG) Tema 4. Simulació per elements finits de l'omplerta de motlles amb PROCAST.

Degree competences to which the content contributes:

(ENG) Tema 5. Introducció als processos de forja.

Degree competences to which the content contributes:

(ENG) Tema 6. Disseny de matrius.

Degree competences to which the content contributes:

(ENG) Tema 7. Disseny 3D de matrius amb NX

Degree competences to which the content contributes:

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### Qualification system

The grade of the course will be obtained applying the following criteria:

Practical project mark: 30% (According to: Mold mark 50%; Piece mark 20%; Project mark 30%)

Mid-term exam mark: 15%

Simulations mark: 30% (According to: Class exercises 30%; Piece simulation 30%; Project simulation 40%)

Presentation mark: 25%

Final mark:  $0,30 \cdot (\text{Practical project}) + 0,15 \cdot (\text{Mid-term exam}) + 0,30 \cdot (\text{simulations}) + 0,25 \cdot (\text{Presentation})$

### Bibliography