



## IDENTIFYING DATA

### Manufacturing technologies and systems

Subject	Manufacturing technologies and systems			
Code	V12G340V01701			
Study programme	Grado en Ingeniería en Organización Industrial			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Mandatory	3rd	1st
Teaching language	#EnglishFriendly Spanish Galician			
Department				
Coordinator	Pérez García, José Antonio			
Lecturers	Peláez Lourido, Gustavo Carlos Pérez García, José Antonio			
E-mail	japerez@uvigo.es			
Web	<a href="http://campusremotouvigo.gal/">http://campusremotouvigo.gal/</a>			
General description	This matter is "English *Friendly"			

## Training and Learning Results

Code				
B3	CG 3. Knowledge in basic and technological subjects that will enable them to learn new methods and theories, and equip them with versatility to adapt to new situations.			
C15	CE15 Basic knowledge of production systems and manufacturing.			
C30	CE30 Applied knowledge of systems and processes of manufacturing, metrology and quality control.			
D2	CT2 Problems resolution.			
D8	CT8 Decision making.			
D9	CT9 Apply knowledge.			
D10	CT10 Self learning and work.			

## Expected results from this subject

Expected results from this subject		Training and Learning Results		
(*)	B3	C15	D2	
		C30	D8	
			D9	
			D10	

## Contents

Topic			
Unit 1.- Industrialization of Products	Chapter 01.- Concurrent Engineering and DFMA Chapter 02.- Product Specifications for Manufacturing Chapter 03.- Industrialization of Products Chapter 04.- Manufacturing Costs		
Unit 2.- Manufacturing Technologies	Chapter 05.- Molding of metals and plastics Chapter 06.- Metal forming Chapter 07.- Machining Chapter 08.- Composites manufacturing processes Chapter 09.- Additive Manufacturing		

<b>Planning</b>			
	Class hours	Hours outside the classroom	Total hours
Lecturing	13	26	39
Problem solving	19.5	39.5	59
Laboratory practical	18	6	24
Report of practices, practicum and external practices	0	6	6
Objective questions exam	0	6	6
Project	0	10	10
Essay	0	6	6

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

<b>Methodologies</b>	
	Description
Lecturing	The theoretical classes will be carried out combining the blackboard explanations with the use of transparencies, videos and computer presentations.
Problem solving	Problem solving The purpose of these classes is to complement the content of the notes, interpreting the concepts in these exposed through the sample of examples and performing exercises
Laboratory practical	The practical laboratory classes will be held in groups of 20 students maximum, and using the resources available both in the laboratories of the IPF Area and in the Computer Rooms at the EEI-Campus

### Personalized assistance

Methodologies	Description
Lecturing	Both in class and in the tutorial hours, that the teacher will communicate to the students at the beginning of the course (both in person and online through Remote Campus)
Laboratory practical	Both in class and in the tutorial hours, that the teacher will communicate to the students at the beginning of the course (both in person and online through Remote Campus)
Problem solving	Both in class and in the tutorial hours, that the teacher will communicate to the students at the beginning of the course (both in person and online through Remote Campus)

<b>Assessment</b>						
	Description	Qualification	Training and Learning	Results		
Report of practices, practicum and external practices	Practice report	10	B3	C15 C30	D9 D10	
Objective questions exam	Partial Exam and Final Exam	60	B3	C15	D2 D8 D9 D10	
Project	Product Industrialization Project	20	B3	C15 C30	D2 D8 D9 D10	
Essay	Manufacturing Systems Simulation Work	10	B3	C15 C30	D2 D8 D9 D10	

### Other comments on the Evaluation

#### FIRST OPORTUNITY

a) Continuous Assessment Modality The continuous evaluation will be carried out during the teaching period of the subject. In this modality, all tests are compulsory. The contribution of each test to the total grade is as follows:

1. Evaluation of the practical contents by means of a written test, elaboration and delivery of the practical memory (10% of the qualification).
2. Preparation and presentation of work on Manufacturing Systems (10% of the qualification).
3. Preparation and presentation of Product Industrialization work (20% of the qualification)

4. First written test of the contents taught in non-practical classes (30% of the grade). This test is scheduled for the middle of the semester in which the subject is taught and as established in Article 20 of the "Regulations on the evaluation, qualification and quality of teaching and the student learning process", it will be done during the school's school hours. subject.
5. Second written test of the contents taught in non-practical classes (30% of the grade). This test will be carried out on the official date set by the center to carry out the global evaluation of the subject.

a) In the event that the student does not reach this minimum in the first continuous assessment test, they may be assessed through the global assessment methodology, expressing in writing their waiver of continuous assessment. b) To pass the subject in the First Opportunity by continuous evaluation, a minimum of 40% must be achieved in each of the 5 items described above and achieve a total grade equal to or greater than 5 (scale 0 to 10). If this requirement is not met, the mark that will appear in the minutes can never be higher than a "4.9" (scale 0 to 10)

**b) Overall Assessment Modality.** Those students who renounce the continuous evaluation methodology and therefore use the global evaluation methodology, will be evaluated based on a final written test and the delivery and presentation of the work and the subject project. The contribution of each test to the total grade is as follows: Preparation and presentation of the Simulation Work of Manufacturing Systems (15% of the qualification). Preparation and presentation of the Product Industrialization Project (25% of the qualification) Written test on the contents of the subject taught in the theoretical classes (60% of the grade), on the date set by the center. To pass the subject in the First Opportunity by global evaluation, a minimum of 40% must be achieved in each of the 3 items described above and achieve a total grade equal to or greater than 5 (scale 0 to 10). If this requirement is not met, the mark that will appear in the minutes can never be higher than a "4.9" (scale 0 to 10) **SECOND OPORTUNITY (Jury exam):**

**a) Continuous Assessment Modality** Those students who in the First Opportunity were evaluated by the continuous evaluation modality, if they wish, may maintain the qualifications of sections 1) 2) and 3). In this case, they will be evaluated by means of a written test, on the contents taught in the theoretical classes. The test will represent 60% of the final grade, being necessary to reach a minimum of 40%, so that the mark of this test can be added to those obtained in sections 1), 2) and 3). This test will take place on the official date set by the center.

To pass the subject in the First Opportunity by continuous evaluation, a minimum of 40% must be achieved in each of the 5 items described above.

**b) Overall Assessment Modality:** The criteria established in the First Opportunity are maintained.

**Ethical Commitment:** It is expected that the student presents an adequate ethical behavior, as stated in Articles 39, 40, 41 and 42 of the Regulation on the evaluation, qualification and quality of teaching and the student learning process, approved in the Senate on April 18, 2023. In the case of detecting unethical behavior (copying, plagiarism, use of unauthorized electrical devices, and others) it will be considered that the student does not meet the necessary requirements to pass the subject. In this case, the overall grade for this academic year will be fail (0.0).

**NOTICE:** In the event of discrepancies between the different language versions of the guide, what is included in the Spanish version will prevail.

## Sources of information

### Basic Bibliography

AENOR, **AENORMas (Norweb)**, AENOR, 2021

Campbell, John, **Complete Casting Handbook**, 2, Elsevier, 2015

Groover, Mikell P., **Automation, Production Systems, and Computer Integrated Manufacturing**, 4<sup>a</sup>, Pearson, 2016

Rovira, Norbert, **Fusion 360 con ejemplos y ejercicios prácticos**, 1<sup>a</sup>, Marcombo, 2020

### Complementary Bibliography

Rubio Alvir, Eva, **Ejercicios y problemas de mecanizado**, 1<sup>a</sup>, Pearson Educación, 2011

Mikell P. Groover, **Principles of Modern Manufacturing**, 5<sup>a</sup>, Wiley, 2013

J.T. Black, Ronald A. Kohser, **Degarmo's materials and processes in manufacturing**, 12th ed, Wiley, 2017

Serope Kalpakjian, Steven R. Schmid, **Manufacturing engineering and technology**, 7<sup>a</sup>, Pearson Education,, 2014

## Recommendations

### Subjects that are recommended to be taken simultaneously

Control and industrial automation/V12G340V01702

Quality, safety and sustainability management/V12G340V01602

Materials engineering/V12G340V01803

Operations management/V12G340V01601

### Subjects that it is recommended to have taken before

Materials science and technology/V12G340V01301

Fundamentals of manufacturing systems and technologies/V12G340V01305

