



## IDENTIFYING DATA

### Advanced manufacturing technologies

Subject	Advanced manufacturing technologies			
Code	V12G380V01935			
Study programme	Degree in Mechanical Engineering			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Optional	4th	2nd
Teaching language	Spanish			
Department				
Coordinator	Pereira Domínguez, Alejandro			
Lecturers	Pereira Domínguez, Alejandro			
E-mail	apereira@uvigo.es			
Web				
General description	Subject of the degree of mechanics of the speciality of design and manufacture. It treats to apply the methodology of learning based in project (*PBL), consistent in the proposition of projects to make by groups, in the workshops from the phase of *conceptualización to the phase of manufacture, setting, verification and adjust.			

## Competencies

Code	
B1	CG1 Skills for writing, signing and developing projects in the field of industrial engineering, whose purpose, specializing in Mechanics, construction, alteration, repair, maintenance, demolition, manufacturing, installation, assembly or operation of: structures, mechanical equipments, energy facilities, electrical systems and electronic installations and industrial plants, and manufacturing processes and automation.
B5	CG5 Knowledge to carry out measurements, calculations, assessments, appraisals, surveys, studies, reports, work plans and other similar works.
C15	CE15 Basic knowledge of production systems and manufacturing.
C26	CE26 Applied knowledge of systems and manufacturing processes, metrology and quality control.
D8	CT8 Decision making.
D9	CT9 Apply knowledge.
D17	CT17 Working as a team.
D20	CT20 Ability to communicate with people not expert in the field.

## Learning outcomes

Expected results from this subject	Training and Learning Results
Capacity to resolve problems of manufacture in industrial surroundings	C26
Knowledges *basicos of systems of production and manufacture	C15
Capacity of editorial and writing of documents	B1
Capacity of learning	D8
Capacity of calculation and measurements	B5
Analysis and synthesis of approach of improvements and resolution of problems	D9
Oral communication and written by means of the exhibition of works and *realzacions of memories	D20
Application and utilisation of computer tools	B5
Taking of decisions	D8
Application of the knowledges *aquiridos	D9
Realisation of changes and experimentation in process	B5
The work in team values in groups of 3 to 5 people.	D17
Exhibition of works	D20

<b>Contents</b>	
Topic	
Mechanised of High Speed.	<input type="checkbox"/> Considerations and parametrisation of the Half <input type="checkbox"/> process and tools used <input type="checkbox"/> Simulation of process. Application
Processes of *moldeo of polymeric materials and *composites.	<input type="checkbox"/> Parametrisation of processes of conformed. Analysis <input type="checkbox"/> Process injection <input type="checkbox"/> Conformed *composites <input type="checkbox"/> Project of manufacture of mould
Technicians Advanced of Measurement and Control of Quality. Technical *CAQ	<input type="checkbox"/> Systems of measurement with contact <input type="checkbox"/> Systems of measurement without contact <input type="checkbox"/> *Aseguramiento of dimensional tolerances, geometrical, of form and superficial <input type="checkbox"/> Finished position and *Texturizado
Programming and control of cells of manufacture.	<input type="checkbox"/> *Programacion CAM of CM <input type="checkbox"/> *Programacion CAM of lathe <input type="checkbox"/> *Programacion CAM of Robot <input type="checkbox"/> Simulation and *Programacion Cell
Technologies for the *micro and the *nanofabricación.	<input type="checkbox"/> Means and toolings of *Microfabricación <input type="checkbox"/> Technologies of *nanofabricación

<b>Planning</b>			
	Class hours	Hours outside the classroom	Total hours
Workshops	26	0	26
Workshops	0	96	96
Problem solving	14	0	14
Presentation	4	0	4
Lecturing	10	0	10

\*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
Workshops	Preparation of project of manufacture, memory and practical design
Workshops	*Guia Of tools used in function of the existent resources
Problem solving	Application of problems of calculation of manufacture
Presentation	Presentation by heart and project designed and manufactured
Lecturing	Exhibition of theory and application to practical cases

<b>Personalized assistance</b>	
Methodologies	Description
Workshops	The project of course distributes in groups, of 3 to 5 people. *Consistirá In: Preparation of design detailed *Realización of planning of processes Programming of manufacture Execution of manufacture (According to means and available budgets )

<b>Assessment</b>				
	Description	Qualification	Training and Learning Results	
Workshops	Development of design of product and process. The STUDENT takes into account Difficulty level of design TRL of innovation Planificacion process planning Programming CAM Difficulty level of manufacture Execution Memory document	60	C15 C26	D8 D9 D17 D20
Presentation	The students have to present the PBL project based learning process	40	B1 B5	

### **Other comments on the Evaluation**

### **Sources of information**

## Basic Bibliography

### Complementary Bibliography

Pereira Domínguez, Alejandro, **Apuntes de la asignatura**, v4 2016,

Kalpakjian, S.; Steven R. S., **Manufacturing Engineering and Technology**, 7ª ed.,,

Groover, M. P., **Principles of modern manufacturing**, 5ªed,

## Recommendations

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

Manufacturing engineering and dimensional quality/V12G380V01604

## Contingency plan

### Description

=== EXCEPTIONAL MEASURES PLANNED ===

Given the uncertain and unpredictable evolution of the health alert caused by COVID-19, the University of Vigo establishes extraordinary planning that will be activated at the time that the administrations and the institution itself determine it based on safety, health and responsibility criteria. , and guaranteeing teaching in a non-classroom or partially classroom setting. These already planned measures guarantee, at the required time, the development of teaching in a more agile and effective way by being known in advance (or well in advance) by students and teachers through the standardized tool and institutionalized teaching guides.

=== ADAPTATION OF THE METHODOLOGIES ===

\* Teaching methodologies that are maintained

All. With the exception of the realization that will be carried out remotely

\* Non-face-to-face service mechanism for students (tutorials)

Through virtual dispatch on remote and virtual campus

\* Additional bibliography to facilitate self-learning

Documents or links to necessary educational resources will be published in faitic

=== ADAPTATION OF THE EVALUATION ===

\* Tests already carried out

They are all kept with the same weight and value

\* Pending tests that are maintained

They will be carried out electronically through faitic keeping the same weight and value