



## IDENTIFYING DATA

### Advanced manufacturing technologies

Subject	Advanced manufacturing technologies			
Code	V12G380V01935			
Study programme	Grado en Ingeniería Mecánica			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Optional	4th	2nd
Teaching language	Spanish			
Department				
Coordinator	Pereira Domínguez, Alejandro			
Lecturers	Pereira Domínguez, Alejandro Queimaño Piñeiro, David			
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.			

## Training and Learning Results

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.

## Expected results from this subject

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

## Contents

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

## Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	10	0	10
Workshops	28	0	28
Workshops	0	60	60
Problem solving	14	0	14
Presentation	1	0	1
Project	1	36	37

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

## Methodologies

	Description
Lecturing	Exhibition of theory and application to practical cases
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

## Personalized assistance

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 )
Tests	Description
Project	

## Assessment

	Description	Qualification	Training and Learning Results
Workshops	Development of design of product and process. It takes into account Difficulty design Degree of innovation *Realizacion *Planificacion process Realisation programming CAM necessary as I design Degree and difficulty of manufacture Execution Memory written	40	C15 D8 C26 D9 D17 D20
Presentation	The students have to present the PBL project based learning process	20	B1 D17 D20
Project	The technical documentation that has to deliver jointly with the physical Prototype that will include a memory, a budget and the planes	40	B1 C15 D9 B5 C26 D17

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**Other comments on the Evaluation**

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**Sources of information**

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**Basic Bibliography**

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**Complementary Bibliography**

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Pereira Domínguez, Alejandro, **Apuntes de la asignatura**, v2023,

Kalpakjian, S.; Steven R. S., **Manufacturing Engineering and Technology**, 7<sup>a</sup> ed.,,

Groover, M. P., **Principles of modern manufacturing**, 5<sup>a</sup>ed,

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**Recommendations**

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

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Manufacturing engineering and dimensional quality/V12G380V01604

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