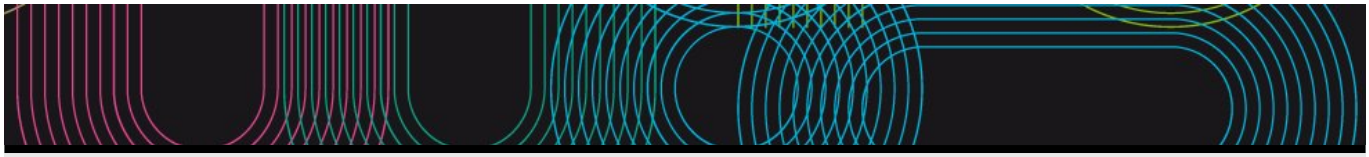

IDENTIFYING DATA				
Advanced manufacturing technologies				
Subject	Advanced manufacturing technologies			
Code	V12G380V01935			
Study programme	Grado en Ingeniería Mecánica			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Optional	4th	2nd
Teaching language	Spanish			
Department				
Coordinator	Pereira Domínguez, Alejandro			
Lecturers	Pereira Domínguez, Alejandro Pérez García, José Antonio			
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.			

Skills	
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

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

Planning	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.			

Methodologies	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

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

Assessment	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