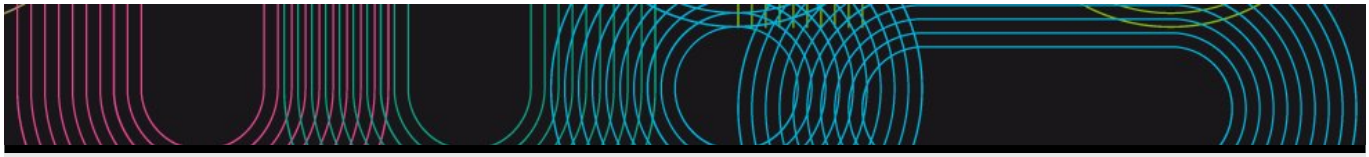

IDENTIFYING DATA				
Advanced Manufacturing Engineering				
Subject	Advanced Manufacturing Engineering			
Code	V04M141V01321			
Study programme	(*)Máster Universitario en Enxeñaría Industrial			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Optional	2nd	1st
Teaching language	Spanish			
Department				
Coordinator	Pereira Domínguez, Alejandro			
Lecturers	Pereira Domínguez, Alejandro			
E-mail	apereira@uvigo.es			
Web	http://moovi.uvigo.gal/			
General description	Subject of specialisation for pertinent students of the degree of Industrial Technologies. In this subject based in *PBL (*project *based *learning) treats to develop a team, tooling or system from the idea to the manufacture and achieve the aims of learning based in realisation of practical project with the utilisation of the available means in laboratory.			

Training and Learning Results	
Code	
A1	Knowledge and understanding that provide a basis or opportunity for originality in developing and / or applying ideas, often in a research context.
A2	That the students can apply their knowledge and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.
A4	Students can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously.
A5	Students must possess the learning skills that enable them to continue studying in a way that will be largely self-directed or autonomous.
C1	CET1. Project, calculate and design products, processes, facilities and plants.
C3	CET3. Conduct research, development and innovation in products, processes and methods.
C5	CET5. Technically and economically manage projects, installations, plants, companies and technology centers.
C8	CET8. Being able to integrate knowledge and handle complexity and formulate judgments based on information that was incomplete or limited, include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments.
C9	CET9. Knowing how to communicate the conclusions -and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously.
C10	CET10. Possess learning skills that will allow further study of a self-directed or autonomous mode.
C13	CTI2. Knowledge and ability to design, calculate and design integrated manufacturing systems.
D5	ABET-e. An ability to identify, formulate, and solve engineering problems.
D11	ABET-k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Expected results from this subject	
Expected results from this subject	Training and Learning Results

- Know the technological base on which support the most recent investigations in the use of machine-tool and teams for manufacture by conformed and teams of inspection.	A1 A2
- Know the main materials and processes employed in components of machines.	A4
- It knows the requests of the distinct components for the realisation of a suitable selection of materials.	A5
- Know the experimental process used when it works with scheme of high speed (*HSM) for manufacture by mechanised	C1 C3
- Know the current technology for improvement of the superficial properties: resistance to the wear and to the corrosion. Purchase criteria for the selection of the treatment of surfaces more adapted to lengthen the life in service of a component.	C5 C8 C9
- Deepen in the technicians of verification of machine-tool.	C10 C13 D5 D11

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

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	5	0	5
Workshops	26	0	26
Workshops	0	56	56
Problem solving	16	0	16
Presentation	2	40	42
Essay	2	0	2
Project	2	0	2
Presentation	1	0	1
*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 memory of Work made and exhibition of results

Personalized assistance

Methodologies	**Description**
Workshops	The project of course distributes in groups, of 3 to 5 people.
Tests	**Description**
Essay	It develops the evolution of the project, and documents the development of the same
Project	
Presentation	

Assessment

	Description	Qualification	Training and Learning Results	
Workshops	Development of design of product and process. The students takes into account Difficulty design (TRL) Degree of innovation Planificacion process CAM program Difficulty Level of manufacture Execution Memory document	40	A4	C1 C3 C13
Presentation	The student must to present the project based learning process for 15 minutes	20	A4	C1 C3 C13
Project	Report with all the teccnical contents	40		

Other comments on the Evaluation

&*amp;*lt;*p&*amp;*gt;Ethical commitment: it expects that the present student a suitable ethical behaviour. In the case to detect a no ethical behaviour (copy, plagiarism, utilisation of unauthorised electronic devices, and others) considers that the student does not gather the necessary requirements to surpass the matter. In this case the global qualification in the current academic course will be of suspense (0.0).&*amp;*nbsp; &*amp;*lt;/*p&*amp;*gt;

Sources of information

Basic Bibliography

Complementary Bibliography

Pereira A., **Notes Manufacturing real cases FAV.**, 2020,

Recommendations