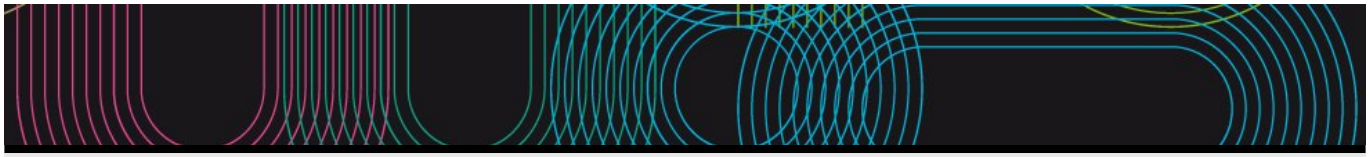

IDENTIFYING DATA				
Industrial Manufacturing				
Subject	Industrial Manufacturing			
Code	V04M141V01109			
Study programme	(*)Máster Universitario en Enxeñaría Industrial			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Optional	1st	1st
Teaching language	Spanish			
Department				
Coordinator	Pereira Domínguez, Alejandro			
Lecturers	Pereira Domínguez, Alejandro			
E-mail	apereira@uvigo.es			
Web	http://http://cursos.faitic.uvigo.es/moodle1516/course/view.php?id=213			
General description	This subject is of adaptation of the Degree of Industrial Technologies for students from Degree of *Ingeneiría in Electronics and Automatic Industrial. They develop contents and methodologies for from the phase of the idea, going through design detailed, and planning of manufactures create a piece, tooling or mechanical group.			

Competencies	
Code	
C7	CET7. Apply their knowledge and solve problems in new or unfamiliar environments within broader contexts and multidisciplinary environments.
C13	CTI2. Knowledge and ability to design, calculate and design integrated manufacturing systems.

Learning outcomes	
Expected results from this subject	Training and Learning Results
- Know the technological base and basic appearances of the processes of manufacture	C7
- Comprise the basic appearances of the systems of manufacture	C13
- Purchase skills for the selection of processes of manufacture and preparation of the planning of manufacture	
- Develop skills for the manufacture of groups and elements in surroundings *CADCAM	
- Application of technologies *CAQ	

Contents	
Topic	
Thematic block I: Integration of Design of product, design of process and manufacture.	Lesson 1. Technologies of additive manufacture and *rapid *tooling. Lesson 2. Types and design of Systems of manufacture. Lesson 3. Design of product for manufacture and setting (*DFMA)
Thematic block II: Design and planning of processes of manufacture.	Lesson 4. Methodology of Design and Planning of processes of manufacture. Lesson 5. *Isostatismos, subjection and toolings. Lesson 6. Selection of operations, tools toolings and conditions of process. Lesson 7. Technicians of improvement of design and of processes.
Thematic block III: Resources of the Systems of Manufacture.	Lesson 8. Description and structure of Machines tool with Numerical Control, Industrial robots and *manipuladores, and systems of positioning and maintenance. Lesson 9. Systems of measurement and verification in lines of manufacture. Definition of Ranges of control Lesson 10. Distribution in plant of resources and flow of materials.

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	12	15	27
Laboratory practical	24	0	24
Project based learning	16	15	31
Mentored work	0	60	60
Essay	2	0	2
Essay questions exam	2	2	4

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

Methodologies	
	Description
Lecturing	Basic exhibition of exposed contents in the step 3 Exhibition practical cases and theorists
Laboratory practical	*Nº Half denomination Hours 1 Design of product and process (Piece to melt, for example..) Program *CAD, type *Catia or similar 2*h 2 Design and planning of process of manufacture of piece. Design of Tooling for product (Example. *Coquilla + Electrode) Program *Cad type *catia or similar 2*h 3 Programming assisted of mechanised of tooling. *Winunisoft Or similar CAM, (*Catia, *powerMill,) 4*h 4 Programming assisted of mechanised of tooling. CAM, (*Catia, *NX, Fusion) 4 *h 5 Application Range measurement to tooling and to piece (Mock). *CAQ (*Catia, *NX *MSproject) 2*h 6 Design of cell of manufacture and disposal in plant *Delmia, *Catia, or similar 2*h.
Project based learning	Related with work *tutelado. The difference is that they are not common works but *particularizan in project. Each project, therefore it is distinct.
Mentored work	Project (Work to make by student. It would correspond to Groups C of groups of 4 students) Total 18*h

Personalized assistance	
Methodologies	**Description**
Mentored work	*Tutorización Of Works and projects of groups from among 3 and 5 people.
Project based learning	*Tutorización Specific in each project proposed
Tests	**Description**
Essay	*Tutorización Of Works and projects of groups from among 3 and 5 people.

Assessment			
Description		Qualification	Training and Learning Results
Essay	Development of project of course	100-0	C7 C13

Other comments on the Evaluation
&*lt;*p&*gt;The evaluation consists of &*lt;/*p&*gt;&*lt;*p&*gt;To.- It tests type Test : No Compulsory if the number of students is inferior to 30 and has to have a note &*gt; 4 to be able to compensate with project or with long proof. Value 50%&*lt;/*p&*gt;&*lt;*p&*gt;*B1.- I work Project: Volunteer. If it does not choose work will do proof of long answer with inclusion of problems. Value 50%&*lt;/*p&*gt;&*lt;*p&*gt;*B2.- Proof of long answer: *Consisitente in problems and or cases. Value 50%&*lt;/*p&*gt;&*lt;*p&*gt;The note will be *constituída by To +*B being *B= *B1 or *B2 &*lt;/*p&*gt;&*lt;*p&*gt;In case of behaviour little ethical so many morals like professional, can conclude that the student has not reached the necessary competitions to happen the subject .&*lt;/*p&*gt;

Sources of information
Basic Bibliography
Pereira A., Prado T., **Apuntes de la Asignatura FI**, v6 2020,
Pereira A., **Ejercicios y casos de Ingeniería de fabricación**,
Kalpakjian, S., **Manufacturing Engineering and Technology**, 7th ed.,
Complementary Bibliography

Recommendations

Subjects that it is recommended to have taken before

Fundamentals of manufacturing systems and technologies/V12G360V01402

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 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