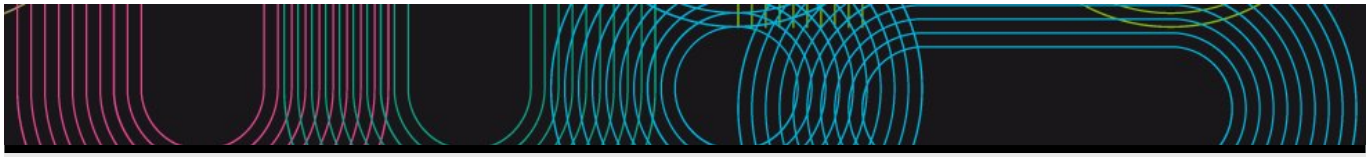
Universidade Vigo

Subject Guide 2023 / 2024



IDENTIFYING DATA				
Manufacturing engineering				
Subject	Manufacturing engineering			
Code	V12G360V01604			
Study programme	Grado en Ingeniería en Tecnologías Industriales			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Mandatory	3rd	2nd
Teaching language	Spanish			
Department				
Coordinator	Pereira Domínguez, Alejandro			
Lecturers	Pereira Domínguez, Alejandro			
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Web				
General description				

Training and Learning Results	
Code	
B3	CG3 Knowledge in basic and technological subjects that will enable them to learn new methods and theories, and equip them with versatility to adapt to new situations.
C20	CE20 Applied knowledge of systems and manufacturing processes, metrology and quality control.
D2	CT2 Problems resolution.
D8	CT8 Decision making.
D9	CT9 Apply knowledge.
D10	CT10 Self learning and work.
D17	CT17 Working as a team.
D20	CT20 Ability to communicate with people not expert in the field.

Expected results from this subject	Training and Learning Results		
(*)	B3	C20	D2 D8 D9 D10 D17 D20

Contents	
Topic	
Thematic block I: Integration of Design of product and manufacture.	Chapter 0. Design of product and of process chapter 1. Systems of manufacture. Chapter 2. Technologies of additive manufacturing Chapter 3. Design of product for manufacturing (DFMA)
Thematic block II: Design and planning of processes of manufacture.	Chapter 4. Methodology of Design and Planning of processes of manufacture. Chapter 5. Choosing of operations, tools, toolings and conditions of process. chapter 6. Datums, fixturing and toolings. Chapter 7. Technicians of improvement of design and processes.

Thematic block III: Resources of the Systems of Manufacture.	Chapter 8. Machines tools with Numerical Controland components Chapter 9. Industrial robots and logistics devices. Systems of positioning, maintenance Chapter 10. Systems of measurement and verification in lines of manufacture. Definition of control charts

Planning			
	Class hours	Hours outside the classroom	Total hours
Introductory activities	1	0	1
Problem solving	18	16	34
Laboratory practical	18	0	18
Mentored work	0	60	60
Lecturing	14	14	28
Objective questions exam	2	0	2
Essay	2	0	2
Essay questions exam	2	2	4
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
Introductory activities	Introduction Objective theoretical topics practical topics Assestment Develop of projects. Desing and Develop Bibliographic Resources
Problem solving	Development of real practical cases and exercises on the following contents 1. Distribution in plant 2. Design of product / tooling 3. Application *DFMA 4. Application dimensional tolerances, geometrical and of superficial finishing 5. Design of operations of manufacture. 6. Conditions of process manufacturing. 7. Calculus of speeds, feeds, strengths and powers in manufacture 8. Procedures of measurement.
Laboratory practical	*P1-2 PLM. Design of product and of process. Platform CADCAM available (Catia, NX, Fusion) 2h +2h P3 Planning process of manufacturing. Design of Tooling for product 2h P4 -5 -6 Programming assisted of machined tooling, CAM, (Catia, NX, Fusion, □) 6h P7 -8 -9 Supervsing works 6*h
Mentored work	Project (Work to make by student. It would correspond to Groups C of 5 students) Total 18*h
Lecturing	Synthetic teaching of the topics Proposition real cases and problems

Personalized assistance	
Methodologies	**Description**
Mentored work	Attending Works and supervising projects (groups from among 3 and 5 people).

Assessment					
	Description	Qualification	Training and Learning Results		
Objective questions exam	Examination with questions type test, in which the no hit answers discount. The test can comport questions of type problems and development.	40	B3	C20	D2 D8 D9

Essay	Development of project of course. It will evaluate , the capacity of work in team, creativity, autonomous work and in case of public presentation the capacity of communication and *sintesis.	40	C20	D2 D9 D10 D17 D20
Essay questions exam	Development of problems and or cases	10	C20	D2 D8 D9 D10
Presentation	(*)Exposición de Desarrollo de trabajo realizado	10		

Other comments on the Evaluation

The evaluation consists of:
A.-) Examination of theorical questions : It´s mandatory that students have a mark > 4 (0 to 10) to be able to make averarage with part B (Project or Examination of questions of development) Value 50%

Practical Part, The student has to choose between *B1 or *B2
B1.-)Project. Value 50%
B2.-)Examination of development questions : Consistent in problems and cases. Value 50%

The final mark is the average mark A +B, being B= B1 or B2

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) will consider that the student does not gather the necessary requirements to surpass the matter. In this case the global qualification in the present academic course will be of suspense (0.0).

Sources of information

Basic Bibliography

Complementary Bibliography

Pereira A., Prado T., **Notes of the subject IF**, 2015,
Pereira A., **Exercises and cases of manufacturing Engineering**, 2016,
Kalpakjian, S., **Manufacturing Engineering and Technology**, 7th ed.,

Recommendations

Subjects that it is recommended to have taken before

Fundamentals of manufacturing systems and technologies/V12G360V01402

Other comments

Requirements:
To enrol in this matter is necessary to have surpassed or be enrolled of all the matters of the inferior courses to the course in which it is situated this matter.