



## IDENTIFYING DATA

### Manufacturing engineering

Subject	Manufacturing engineering			
Code	V12G363V01604			
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 Prado Cerqueira, María Teresa			
Lecturers	Prado Cerqueira, María Teresa			
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Web				
General description				

## Training and Learning Results

Code	
B3	CG3 Knowledge of basic and technological subjects that enable students to learn new methods and theories, and to adapt to new situations.
C20	CE20 Applied knowledge of systems and manufacturing processes, metrology and quality control.
D2	CT2 Problem solving.
D8	CT8 Decision making.
D9	CT9 Application of 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

Expected results from this subject	Training and Learning Results		
- Know the technological basis and the basics of manufacturing processes	B3	C20	D2
- Understand the basics of manufacturing systems			D8
- Acquire skills for the selection of manufacturing processes and developing manufacturing planning			D9
- Develop skills for making assemblies and parts in CAD/CAM environments			D10
- Application of CAQ technologies			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 Control and 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 Assessment Develop of projects. Design 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 CAD/CAM 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 Supervising 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
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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 synthesis.	40	C20	D2 D9 D10 D17 D20
Essay questions exam	Development of problems and or cases	10	C20	D2 D8 D9 D10
Presentation	Exhibition of Development of work made	10		D17 D20

### Other comments on the Evaluation

The evaluation consists of:

To.-) Examination of objective questions : Compulsory and has to have a note  $\geq 4$  to be able to compensate with work or with Examination of questions of development Value 40%

practical Part, to choose between \*B1 or \*B2

\*B1.-)I work Project. Value 40%

\*B2.-)Examination of questions of development: Consistent in problems and or cases. Value 40%

The final note composes of To +\*B, being \*B= \*B1 or \*B2

ethical Commitment: it expects that the present student a suitable ethical behaviour.&nbsp;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.