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 D10
- Develop skills for making assemblies and parts in CADCAM environments			D17
- Application of CAQ technologies			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, ꞏ) 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 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 &*gt; 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.