SUBJECT TEACHING GUIDE

G752 - Manufacturing Processes I

Degree in Mechanical Engineering

Academic year 2021-2022

1. IDENTIFYING DATA					
Degree	Degree in Mechanical Engineering			Type and Year	Compulsory. Year 3
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Manufacturing Processes Module: Specific Mechanical Technology				
Course unit title and code	G752 - Manufacturing Processes I				
Number of ECTS credits allocated	6	Term		Semester based (2)	
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. TRANSPORTES Y TECNOLOGIA DE PROYECTOS Y PROCESOS
Name of lecturer	ALEJANDRO ALONSO ESTEBANEZ
E-mail	alejandro.alonso@unican.es
Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 3. LAB. METROLOGIA (S3060)
Other lecturers	LAURA CASTAÑON JANO

3.1 LEARNING OUTCOMES
- Knowledge about the most important concepts used in the field of dimensional metrology.
- Knowledge about the procedure and equipment to verify a machine-tool.
- Knowledge about welding processes.
- Knowledge about quality controls in welded joints.

4. OBJECTIVES

Students should reach knowledge on dimensional metrology.
Students should be able to select and use appropriate tools to verify a machine-tool.
Students should be able to select the equipment and procedure for welded constructions.
Students should know the quality control techniques for welded joints.

6. COURSE ORGANIZATION

CONTENTS	
1	Dimensional metrology. - Length measurement equipment.
2	- Angle measurement equipment.
3	- Dimensional tolerances, fits and gauges pass / fail.
4	- Geometric tolerances and surface finish.
5	- Measurement uncertainty.
6	- Verification of threads and machine tools.
7	- Introduction to arc welding technology.
8	- Arc welding processes.
9	- Other welding techniques.
10	- Quality control of welded joints.

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Exam 1	Written exam	No	Yes	35,00
Exam 2	Written exam	Yes	Yes	35,00
1st Oral and written presentation	Work	No	No	10,00
2nd Oral and written presentation	Work	No	No	10,00
Lab reports.	Laboratory evaluation	No	No	10,00
TOTAL				100,00

Observations

To pass the subject each one of the following requirements must be met :
0.35*Exam 1 mark+0.35*Exam 2 mark+0,1* First Project mark+0.1*Second Project mark+0.1*Lab reports will be greater o equal to 5.

'The remote evaluation of the works, laboratory practical exercises and written tests is foreseen, in the case of a new health alert by COVID-19 making it impossible to carry out the evaluation in person.'

Observations for part-time students

The continuous evaluation is replaced by works and exams in the final evaluation. Laboratory work will be evaluated in the final exam of the subject.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

Temas 1-6.
Apuntes propios de la Asignatura.
Centro Español de Metrología. Guía para la expresión de la incertidumbre de medida. 1ºEdición. 2008.
Metrología y sus Aplicaciones. Editorial Patria. 2014. Adolfo Escamilla Esquivel.
Control dimensional de procesos. Sanz Glaria.
Metrología y ensayos: verificación de productos / E. Ortea.

Temas 7-10.
Manual del soldador. 26ºEdición. Ed CESOL. 2016.
Metrología y ensayos. Editorial Paraninfo. 2012. Simón Millán Gómez.
Welding, Brazing and Soldering. ASM Handbook Vol. 6
Metals Handbook - American Society for Metals.