

## SUBJECT TEACHING GUIDE

### G752 - Manufacturing Processes I

### Degree in Mechanical Engineering

Academic year 2024-2025

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	LAURA CASTAÑÓN JANO				
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Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 3. DESPACHO (S3044)				
Other lecturers	MARIANO LAZARO URRUTIA				

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. SUBJECT PROGRAM**

**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
<b>TOTAL</b>				<b>100,00</b>

**Observations**

To pass the subject each one of the following requirements must be met :  
 $0.35 \cdot \text{Exam 1 mark} + 0.35 \cdot \text{Exam 2 mark} + 0.1 \cdot \text{First Project mark} + 0.1 \cdot \text{Second Project mark} + 0.1 \cdot \text{Lab reports}$  will be greater or 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. 1ª Edición. 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. 26ª Edición. 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.