COMILLAS
UNIVERSIDAD PONTIFICIA
ICAI ICADE CIHS

Syllabus
2024 - 2025

GENERAL INFORMATION

Data of the subject	
Subject name	Manufacturing Engineering
Subject code	DIM-GITI-449
Mainprogram	Bachelor's Degree in Engineering for Industrial Technologies
Involved programs	Grado en Ingeniería en Tecnologías Industriales [Fourth year]
Quarter	Semestral
Credits	3,0 ECTS
Type	Optativa (Grado)
Department	Department of Mechanical Engineering
Coordinator	Mariano Jiménez Calzado

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DESCRIPTION OF THE SUBJECT

Contextualization of the subject

Prerequisites

- Previous knowledge of Graphic Expression and use of CAD tools, as well as knowledge of Materials Science

Course contents

Contents

- Introduction. Manufacturing Cycle. Information to establish a manufacturing cycle. Organization of production areas and resources. Technical and functional considerations in the electrical and mechanical field.
- Dimensional verification techniques. Metrological vocabulary (VIM). Causes of measurement error. Dimensional measuring instruments and their metrological properties.
- Welding processes. Types of welding: soft, strong, oxyacetylene, arc with covered electrode, TIG, MIG, resistance, friction, laser. Welding process. Defectology.
- Advanced transformation processes: additive manufacturing, technologies and application.

EVALUATION AND CRITERIA

Evaluation activities	Evaluation criteria	Weight
• Tests carried out at the end of class in the form of a test or short exercise	• Understanding of concepts. • Theoretical justification of the practical results.	10
• Individual practical work. • Group work	• Compression of concepts. • Selection of manufacturing processes. • Application of verification techniques.	15
• Laboratory reports.	• Understanding of concepts. • Laboratory expertise. • Justification of practical results.	25
• Final exam	• Differentiation and application of different manufacturing and verification processes.	50

BIBLIOGRAPHY AND RESOURCES

Basic References

- Mariano Jiménez Calzado. APUNTES-PRESENTACIONES MOODLE - ICAI DE INGENIERÍA DE FABRICACIÓN. Fichas técnicas de

procesos industriales.

- Mikell Groover. FUNDAMENTOS DE MANUFACTURA MODERNA: MATERIALES, PROCESOS Y SISTEMAS (3ª edición). PRENTICE HALL HISPANOAMERICANA S.A. ISBN 9789688808467