

DIM-GITI-447 MANUFACTURING ENGINEERING

SEMESTER: Fall Spring

CREDITS: 4,5 ECTS (45 hours-3 hrs. per week–30 hours Theory +15 hours Laboratory)

LANGUAGE: Spanish

DEGREES: GITI

Course overview

This course provides students ability to implement systems and manufacturing processes, metrology and quality control of industrial equipment about electrical speciality.

Prerequisites

There are no formal prerequisites to prevent this course. However is recommended concepts about mechanical drawing and tolerances.

Course contents

Theory:

1. Principles of transformation processes I. Conformation of parts by forming processes.
2. Principles of transformation processes II. Conformation of parts by welding processes.
3. Principles of transformation processes II. Conformation of parts by casting processes.
4. Principles of transformation processes II. Conformation of parts by metal cutting processes.
5. Metrology and control of components.

Laboratory:

There will be three 2-hour sessions between the third and the last lecture week, including the lab exam.

P1. Forming: press, blender, etc.

P2. Welding: TIG, MIG, SMAW, etc.

P3. Casting: sand, lost wax.

- P4.** Conventional metal cutting: lathe, milling, grinding.
P5. Metrology: 2D and 3D.

Textbook

- Mariano Jiménez Calzado. APUNTES 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

Grading

The following conditions must be accomplished to pass the course:

- A minimum overall grade of at least 5 over 10.

The overall grade is obtained as follows:

- Standard evaluation at the end of the term:
 - 10% Midterms exams.
 - 5% Homework.
 - 25% Lab reports.
 - 60% End of term exam (paper). A minimum grade in the final exam of 4 over 10.
- Attendance: minimum 85% to be allowed to take the exam.
- Additional evaluation during July (for those who do not pass at the end of the term):
 - 30% Lab reports.
 - 70% July exam (paper).