

DIM-GITI-442 Machine Elements

SEMESTER: Spring
CREDITS: 4.5 ECTS
LANGUAGE: Spanish
DEGREES: GITI

Course overview

This course provides students basic knowledge about fundamental elements used in machine construction.

Prerequisites

There are no formal prerequisites to prevent this course. However, concepts about rational mechanics and strength of materials are deeply recommended.

Course contents

Theory:

1. Torque and moment of inertia equivalence from different axles.
2. Fatigue study. Fatigue criteria
3. Bolts. Fitting torque. Other methods.
4. Belts. Different kind of belts.
5. Joints and Clutches. Cardan. Constant-velocity coupling.
6. Flywheels
7. Contact pressures. Hertz Theory. Bearings and Gears.

Textbook

- Luis García Pascual. TEORÍA DE MÁQUINAS (Diseño y Cálculo). Ediciones ICAI
- Joseph Edward Shigley, Charles R. Mischke. DISEÑO EN INGENIERÍA MECÁNICA. Mac. Graw-Hill
- Ortiz Berrocal. RESISTENCIA DE MATERIALES, Mc. Graw-Hill

Grading

The following conditions should 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:
 - 20% Midterms exams.
 - 80% 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):
 - 100% July exam (paper)