



GENERAL INFORMATION

Data of the subject	
Subject name	Oil hydraulics and pneumatics
Subject code	DIM-MII-632
Main program	Official Master's Degree in Industrial Engineering
Involved programs	Máster Universitario en Ingeniería Industrial [Second year]
Level	Postgrado Oficial Master
Credits	6,0 ECTS
Type	Compulsory
Department	Department of Mechanical Engineering
Coordinator	Luis Mochón Castro

Teacher Information	
Teacher	
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DESCRIPTION OF THE SUBJECT

Contextualization of the subject
Prerequisites
Basic knowledge of thermodynamics, fluid mechanics and heat transfer.

Course contents



Contents

THEORY:

- Rotary and linear volumetric hydraulic machines
- Hydraulic pressure, flow and direction control valves
- Other elements: accumulators, tanks, heaters, cooler, pressure switches, etc.
- Open and closed hydraulic circuits
- Proportional hydraulics and hydraulic servo systems
- Production and distribution of compressed air
- Pneumatic actuator
- Pneumatic valves
- Pneumatic circuits

LABORATORY:

- Descriptive analysis of volumetric hydraulic machines
- Hydrostatic transmission test
- Oleohydraulic circuits
- Proportional hydraulics
- Variable speed volumetric compressor test
- Two-stage volumetric compressor test
- Descriptive analysis of volumetric compressor
- Pneumatic circuits

EVALUATION AND CRITERIA

Evaluation activities	Evaluation criteria	Weight
Mid-term and final exams	Mid-term exam (20%) Final exam (40%)	60 %
Labs and others	Problems (5%), labs (15%), work, individual or group (15%), class participation (5%)	40 %

Grading

The following conditions must be accomplished to pass the course:

- A minimum overall grade of at least 5 over 10.
- A minimum grade in the final exam of 5 over 10.

The overall grade is obtained as follows:

- Mid-term exam 20%
- Final exam 40%



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Syllabus
2022 - 2023

- Individual exercises 5%
- Labs 15%
- Individual or in group work 15%
- Performance in class and during the lab sessions 5%

BIBLIOGRAPHY AND RESOURCES

Basic References

Notes in Moodle

In compliance with current regulations on the **protection of personal data**, we would like to inform you that you may consult the aspects related to privacy and data that you have accepted on your registration form by entering this website and clicking on "download"

<https://servicios.upcomillas.es/sedelectronica/inicio.aspx?csv=02E4557CAA66F4A81663AD10CED66792>