



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	Obligatoria
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%

- 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

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