



Course guide

205080 - 205080 - Proportional Hydraulics

Last modified: 11/04/2025

Unit in charge: Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 729 - MF - Department of Fluid Mechanics.

Degree: MASTER'S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2013). (Optional subject).
MASTER'S DEGREE IN AERONAUTICAL ENGINEERING (Syllabus 2014). (Optional subject).
MASTER'S DEGREE IN RESEARCH IN MECHANICAL ENGINEERING (Syllabus 2021). (Optional subject).
MASTER'S DEGREE IN MECHANICAL ENGINEERING RESEARCH (Syllabus 2024). (Optional subject).
MASTER'S DEGREE IN INDUSTRIAL ENGINEERING (Syllabus 2025). (Optional subject).

Academic year: 2025 **ECTS Credits:** 3.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: SALVADOR AUGUSTO DE LAS HERAS JIMENEZ

Others: Primer quadrimestre:
FRANCISCO JAVIER ARIAS MONTENEGRO - 1
SALVADOR AUGUSTO DE LAS HERAS JIMENEZ - 1

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

STUDY LOAD

Type	Hours	Percentage
Hours large group	18,0	24.00
Self study	48,0	64.00
Hours small group	9,0	12.00

Total learning time: 75 h

CONTENTS

title english

Description:
content english

Full-or-part-time: 25h
Theory classes: 6h
Laboratory classes: 3h
Self study : 16h



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GRADING SYSTEM

BIBLIOGRAPHY

Basic:

- Cundiff, John S. Fluid power circuits and controls : fundamentals and applications [on line]. Boca Raton, FL [etc.]: CRC Press, cop. 2002 [Consultation: 14/07/2025]. Available on: <https://doi-org.recursos.biblioteca.upc.edu/10.1201/9781420041330>. ISBN 0849309247.
- Chapple, Peter. Principles of hydraulic system design. Oxford: Coxmoor, 2003. ISBN 1901892158.
- Heras, Salvador de las. Fluidos, bombas e instalaciones hidráulicas [on line]. 2a ed. Barcelona: Iniciativa Digital Politècnica, 2018 [Consultation: 10/03/2023]. Available on: <http://hdl.handle.net/2117/127556>. ISBN 9788498807288.
- Ewald, R. Técnica de válvulas proporcionales y de servoválvulas. Lohr a. Main: Mannesmann Rexroth, 1986. ISBN 3802308980.

Complementary:

- Watton, John. Fundamentals of fluid power control [on line]. Cambridge [etc.]: Cambridge University Press, 2009 [Consultation: 18/07/2024]. Available on: <https://www-cambridge-org.recursos.biblioteca.upc.edu/core/books/fundamentals-of-fluid-power-control/46CC3F0706DCC2FD0611A92D81EB7C9E>. ISBN 9780521762502.
- Heras, Salvador de las; Codina Macià, Esteve. Modelización de sistemas fluidos mediante bondgraph. Terrassa: Los autores, cop. 1997. ISBN 8460570355.