

## [MRA107] HYDRAULIC DRIVES

### GENERAL INFORMATION

<b>Studies</b>	Master's Degree in ROBOTICS AND CONTROL SYSTEMS	<b>Subject</b>	?
<b>Semester</b>	2	<b>Course</b>	1
<b>Character</b>	OPTIONAL	<b>Mention / Field of specialisation</b>	AUTOMATION
<b>Plan</b>	2023	<b>Modality</b>	Face-to-face
<b>Credits</b>	3	<b>Hours/week</b>	0
		<b>Language</b>	ENGLISH
		<b>Total hours</b>	28 class hours + 47 non-class hours = <b>75 total hours</b>

### PROFESSORS

ORUNA OTALORA, ANGEL
MARTIN MAYOR, ALAIN

### REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
(No specific previous subjects required)	(No previous knowledge required)

### LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
<b>M1R201</b> - Apply knowledge of automation in industrial machinery with fluid power systems.			x	2,4
<b>M1R223</b> - Ability to work in multidisciplinary teams and in a multilingual environment and to communicate, both orally and in writing, knowledge, procedures, results and ideas related to subjects related to the Master's degree		x		0,2
<b>M1R228</b> - To communicate your conclusions and the knowledge and ultimate reasons that support them to specialized and non-specialized audiences in a clear and unambiguous way		x		0,4
<b>Total:</b>				<b>3</b>

KC: Knowledge or Content / SK: Skills / AB: Abilities

### SECONDARY LEARNING RESULTS

**[RA021] [!]** *Identifica la necesidad de sistemas fluidicos en maquinaria industrial y los relaciona con las características técnicas de los componentes hidráulicos trabajando individualmente y en equipos multidisciplinares*

#### LEARNING ACTIVITIES

	CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	2 h.	8 h.	10 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	6 h.	8 h.	14 h.
Carrying out exercises and solving problems individually and/or in teams	4 h.	7 h.	11 h.

#### EVALUATION SYSTEM

	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	70%
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	30%

**Comments:** All activities (control points, individual and group work, etc.) must have a minimum grade of 5 and an opportunity for recovery (except the PBL). In unapproved training activities (less than 5) the recovery is compulsory and the final grade will be the grade obtained in the recovery. In the activities carried out it is necessary to obtain a minimum mark of 4 to calculate the average mark of the learning result. Otherwise, the note of the learning result will be that of the suspended activity. The system will calculate the final grade with the RA, applying the percentages defined in IKOF.

#### MAKE-UP MECHANISMS

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

**CH - Class hours:** 12 h.  
**NCH - Non-class hours:** 23 h.  
**TH - Total hours:** 35 h.

**RA022** [!] *Selecciona e integra los componentes fluidicos necesarios dentro del sistema automático global de la máquina comunicando sus conclusiones de manera argumentada*

#### LEARNING ACTIVITIES

	CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	6 h.	8 h.	14 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	5 h.	8 h.	13 h.
Practical work in workshops and/or laboratories, individually and/or in teams	5 h.	8 h.	13 h.

#### EVALUATION SYSTEM

W

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	70%
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	30%

#### MAKE-UP MECHANISMS

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

**Comments:** All activities (control points, individual and group work, etc.) must have a minimum grade of 5 and an opportunity for recovery (except the PBL). In unapproved training activities (less than 5) the recovery is compulsory and the final grade will be the grade obtained in the recovery. In the activities carried out it is necessary to obtain a minimum mark of 4 to calculate the average mark of the learning result. Otherwise, the note of the learning result will be that of the suspended activity. The system will calculate the final grade with the RA, applying the percentages defined in IKOF.

**CH - Class hours:** 16 h.

**NCH - Non-class hours:** 24 h.

**TH - Total hours:** 40 h.

## CONTENTS

- \* Components of hydraulic systems
- \* Hydraulic diagrams
- \* Proportional and servo hydraulics

## LEARNING RESOURCES AND BIBLIOGRAPHY

### Learning resources

Moodle Platform  
 Class presentations  
 Lab practical training  
 Technical articles

### Bibliography

<https://parkerhydraulics.co.uk/>  
<https://www.boschrexroth.com/es/es/>