

[MTE001] SENSOR TECHNOLOGY AND DATA ACQUISITION

GENERAL INFORMATION

Studies	MASTER'S DEGREE IN ARTIFICIAL INTELLIGENCE		Subject	?
Semester	1	Course	1	Mention / Field of specialisation
Character	OPTIONAL			
Plan	2024	Modality	Face-to-face	Language CASTELLANO/ENGLISH
Credits	3	Hours/week	0	Total hours 28 class hours + 47 non-class hours = 75 total hours

PROFESSORS

ALONSO GOMEZ, ARRATE
 SESAR GIL, IÑIGO

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
M1T119 - Obtain physical signals from sensors and design the appropriate conditioning for their transfer to control systems in both industrial and non-industrial contexts.			x	2,6
M1T120 - Apply acquired knowledge and problem-solving skills in new, unfamiliar or changing environments within broader (or multidisciplinary) contexts related to their area of study.		x		0,4
Total:				3

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

SECONDARY LEARNING RESULTS

MIRA38 [!] *Aplicar los conocimientos adquiridos y su capacidad de resolución de problemas en entornos nuevos, poco conocidos o cambiantes dentro de contextos más amplios (o multidisciplinares) relacionados con su área de estudio*

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	3 h.	7 h.	10 h.

EVALUATION SYSTEM

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

W

100%

MAKE-UP MECHANISMS

(No mechanisms)

CH - Class hours: 3 h.

NCH - Non-class hours: 7 h.

TH - Total hours: 10 h.

MIRA37 [!] *Aplicar técnicas de captación de señales físicas a partir de sensores y diseñar el acondicionamiento adecuado para su transferencia a los sistemas de control tanto en contextos industriales como no industriales*

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	3 h.	20 h.	23 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.		2 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	14 h.		14 h.
Carrying out exercises and solving problems individually and/or in teams	6 h.	20 h.	26 h.

EVALUATION SYSTEM

W

MAKE-UP MECHANISMS

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	50%	Individual written and/or oral tests or individual coding/programming tests
Individual written and/or oral tests or individual coding/programming tests	50%	

CH - Class hours: 25 h.

NCH - Non-class hours: 40 h.

TH - Total hours: 65 h.

CONTENTS

- * Sentsoreen ezaugarri orokorrak
 - Oinarri teorikoak
 - Transduktore motak
 - Seinale egokitzapena eta kalibrazioa
 - Sentsoreen analisisa eta aukeraketa
- * Sentsoreen komunikazioak
 - IoT sarrera: Gailuetatik Hodeira
 - Komunikazio kontzeptuen berrikuspena
 - Komunikazio protokoloen berrikuspena
 - Hari gabeko sareak
- * Sentsore adimendun baten kasu azterketa praktikoa
 - Kasu errealaren azterketa

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

Moodle Platform
Technical articles

Bibliography

http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_Ink.pl?grupo=MASTERROBOTIKA11&ejecuta=25&_ST