[MTB002] TIME SERIES ANALYSIS

GENERAL INFORMATION

Studies	MASTER'S DEGREE IN ARTIFICIAL INTELLIGENCE			**Subject**	?
Semester	1	**Course**	1	**Mention / Field of specialisation**	
Character	COMPULSORY				
Plan	2024	**Modality**	Face-to-face	**Language**	CASTELLANO
Credits	3	**Hours/week**	0	**Total hours**	33 class hours + 42 non-class hours = **75 total hours**

PROFESSORS

CHICOTE GUTIERREZ, BEATRIZ

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
M1T111 - To know, understand and apply the fundamentals of time series analysis and its application in Artificial Intelligence.			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

MIRA22 **[!]** ***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	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%

MAKE-UP MECHANISMS

(No mechanisms)

CH - Class hours: 3 h.
NCH - Non-class hours: 7 h.
TH - Total hours: 10 h.

MIRA21 **[!]** ***Comprender y utilizar modelos estadísticos y de aprendizaje automático para el análisis de series temporales***

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.	23 h.	25 h.
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning		4 h.	4 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	20 h.		20 h.
Carrying out exercises and solving problems individually and/or in teams	6 h.	8 h.	14 h.

EVALUATION SYSTEM	W

MAKE-UP MECHANISMS

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	40%	Individual written and/or oral tests or individual coding/programming tests
Individual written and/or oral tests or individual coding/programming tests	60%	

CH - Class hours: 30 h.
NCH - Non-class hours: 35 h.
TH - Total hours: 65 h.

CONTENTS

Theoretical bases for Time Series

Probabilistic models for Time Series

Machine Learning approaches for Time Series

Time Series feature extraction

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Technical articles Moodle Platform	Sanchez, J. (2023). Time Series for Data Scientists: Data Management, Description, Modeling and Forecasting. Cambridge: Cambridge University Press.