Goi Eskola Politeknikoa | Mondragon Unibertsitatea

Course: 2023 / 2024 - Course planning

[MDI302] MODELLING AND SIMULATION

GENERAL INFORMATION

Studies	UNIVERSITY MASTER IN STRATEGIC PRODUCT AND SERVICE DESIGN	**Subject**	INSTRUMENTAL AND NUMERIC TECHNIQUES
Semester	1	**Course** 2	
Character	OPTIONAL	**Mention / Field of specialisation**	???
Plan	2022	**Modality** Face-to-face	
Credits	3	**Hours/week** 2.83	**Language** CASTELLANO
		Total hours	51 class hours + 24 non-class hours = **75 total hours**

PROFESSORS

(No professor appointed)

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
MDRA19 - To demonstrate capacity for the management of technological Research, Development and Innovation		x		1,5
MDRB06 - To have and understand knowledge which provides a base or opportunity to be original in the development and/or application of ideas, often in an investigation context	x	x		1,5
			Total:	**3**

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

SECONDARY LEARNING RESULTS

RDM311 [!] *Demostrar capacidad para la gestión de la Investigación, Desarrollo e Innovación tecnológica*

LEARNING ACTIVITIES	CH	NCH	TH
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	8,5 h.	8 h.	16,5 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	12 h.		12 h.
Carrying out exercises and solving problems individually and/or in teams	5 h.	4 h.	9 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	100%	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

CH - Class hours: 25,5 h.
NCH - Non-class hours: 12 h.
TH - Total hours: 37,5 h.

RDM312 [!] *Poseer y comprender conocimientos que aporten una base u oportunidad de ser originales en el desarrollo y/o aplicación de ideas, a menudo en un contexto de investigación*

LEARNING ACTIVITIES	CH	NCH	TH
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	8,5 h.	8 h.	16,5 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	12 h.		12 h.
Carrying out exercises and solving problems individually and/or in teams	5 h.	4 h.	9 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Presentation and defence of exercises, case studies, computer practical work, simulation practical work,	100%	Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work,

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Mondragon
Unibertsitatea
Goi Eskola
Politeknikoa
Escuela Politécnica
Superior

laboratory practical work, term projects, end of degree project, master's thesis, challenges and problems

term projects, end of degree project, master's thesis, challenges and problems

CH - Class hours: 25,5 h.
NCH - Non-class hours: 12 h.
TH - Total hours: 37,5 h.

CONTENTS

1. INTRODUCTION TO DOE2. FULL FACTORIAL DESIGN3. FRACTIONAL FACTORIAL DESIGN4. TAGUCHI METHOD

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes	BOX, GEORGE E.P.; HUNTER, WILLIAM G.; HUNTER, J. STUART. Estadística para investigadores. Ed. Reverté, Barcelona, 1988
	PRAT, ALBERT; TORT-MARTORELL, XAVIER; GRIMA, PERE; POZUETA, LOURDES. Métodos Estadísticos. Control y mejora de la calidad. Ed. UPC, Barcelona, 1997. ISBN 84-8301-222-7
	PHADKE, MADHAV S. Quality Engineering using robust design. Ed. AT&T Bell Laboratories, 1989. ISBN 0-13-745167-9.
	TAGUCHI G.; ELSAYED A. E.; HSIANG T. Quality Engineering in Production Systems. Mc Graw Hill, 1989. ISBN 0-07-062830-0.
	HIRANO, Hiriyuki. Poka Yoke. Mejorando la calidad del producto evitado los defectos. Productivity Press, Inc. ISBN: 84-87022-73-1