[MLA002] Lean production

GENERAL INFORMATION

Studies	UNIVERSITY MASTER'S DEGREE IN PRODUCTIVE LOGISTICS OPERATIONS MANAGEMENT	**Subject**	Improvement of industrial processes
Semester	2	**Course**	1
Character	COMPULSORY	**Mention / Field of specialisation**	
Plan	2022	**Modality**	Face-to-face
Credits	7,5	**Hours/week**	0
Language	CASTELLANO		
Total hours	123.5 class hours + 64 non-class hours = **187.5 total hours**		

PROFESSORS

URIZAR AIZPURU, ENERITZ

LARRINAGA URZELAY, GAIZKA

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
PRODUCTION ENGINEERING	*(No previous knowledge required)*

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
MLR141 - Knows Lean principles and is able to identify waste in the value chain	x			1,8
MLR143 - Identifies and applies the appropriate lean tools to optimise the value chain of the production process.	x	x		2,1
MLR151 - Designs and applies asset management methodologies and techniques to achieve efficient production processes and identifies digital support tools		x		2,6
MLR301 - Works in multidisciplinary teams, without distinction, with a cooperative and participative attitude and efficiently communicates the results obtained orally and in writing in different languages. Without any limitation of accessibility to achieve the established objectives.	x		x	0,5
MLR302 - Understands the impact of their profession on the environment in order to practice with social responsibility	x			0,5
			Total:	7,5

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

SECONDARY LEARNING RESULTS

RML124 **[!]** ***Conoce los principios Lean y es capaz de identificar los despilfarros en la cadena de valor***

LEARNING ACTIVITIES	CH	NCH	TH
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.	4 h.	6 h.
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	10,5 h.	5 h.	15,5 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	10 h.	3 h.	13 h.
Seminars, debates and/or workshops to deepen and/or share experiences.	8 h.	2,5 h.	10,5 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	35%
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	35%
Individual written and/or oral tests or individual coding/programming tests	30%

MAKE-UP MECHANISMS

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

Individual written and/or oral tests or individual coding/programming tests

CH - Class hours: 30,5 h.
NCH - Non-class hours: 14,5 h.
TH - Total hours: 45 h.

RML125 **[!]** ***Identifica y aplica las herramientas lean adecuadas para optimizar la cadena de valor del proceso productivo***

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		4 h.	4 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.	4 h.	6 h.
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	24 h.	7 h.	31 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	6 h.	2,5 h.	8,5 h.
Seminars, debates and/or workshops to deepen and/or share experiences.	3 h.		3 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%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
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	10%	

CH - Class hours: 35 h.
NCH - Non-class hours: 17,5 h.
TH - Total hours: 52,5 h.

RML126 **[!]** ***Diseña y aplica metodologías y técnicas de gestión de activos para conseguir procesos productivos eficientes e identifica las herramientas digitales de apoyo***

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.	4 h.	6 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.	5 h.	7 h.
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	15 h.	8 h.	23 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	10 h.		10 h.
Carrying out exercises and solving problems individually and/or in teams	11 h.	8 h.	19 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	30%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
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	30%	

CH - Class hours: 40 h.
NCH - Non-class hours: 25 h.
TH - Total hours: 65 h.

RML301 **[!]** ***Trabaja en equipos multidisciplinares, sin distinción ninguna, con actitud cooperativa, participativa y comunica eficiente los resultados obtenidos de forma oral y escrita en distintos idiomas. Sin ninguna limitación de accesibilidad para alcanzar lo***

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.	3,5 h.	6,5 h.
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	6 h.		6 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%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
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	50%	

CH - Class hours: 9 h.
NCH - Non-class hours: 3,5 h.
TH - Total hours: 12,5 h.

RML302 **[!]** ***Entiende el impacto de su profesión en el entorno para ejercer con responsabilidad social***

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.	3,5 h.	6,5 h.
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	6 h.		6 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%	Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems
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	50%	

CH - Class hours: 9 h.
NCH - Non-class hours: 3,5 h.
TH - Total hours: 12,5 h.

CONTENTS

1. INtroducción al Lean Manufacturing
2. Lean Kata
3. VSM
4. Lay Out -Celulas
5. SMED
6. KAnban - FIFO lane
7. TPM

8. RCM

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes Presentations by external Lecturers Class presentations Moodle Platform	• Moubray John, RCM II Mantenimiento Centrado en Confiabilidad, Aladon LLC, 2004 • MSG-3 Maintenance Program Development Document, Air Transport Association Washinton, D.C. Revision 2, 1993 • Nowlan, F. Stanley, Howard F. Heap, Reliability Centered Maintenance. Report number AD-A066579, United States Departement of Defense, 1978 • SAE JA 1011, Evaluation Criteriafor Realibilitty Centered Mantenance (RCM) Process, Society of Automotive Engineers, 1998 • SAE JA1012, A guide to the Reliability Centered Mantenance (RCM) Standard, Society of Automotive Engineers, 2002 • Moubray J, Realibilitty Centered Mantenance (RCM), Ed: Butterworth Heinneman, 1997 • Anderson, Ronald T. and Neri, Lewis, Reliability-Centered Maintenance: Management and Engineering Methods, Elsevier Applied Science, London and New York, 1990 • Introducción al TPM. Seiichi Nakajima. 1991. Tecnologías de Gerencia y Producción. • TPM en Industrias de Proceso. Tokutaro Suzuki. 1996. Productivity Press. • TPM for Every Operator. Japan Institute of Plant Maintenance. 1996. Productivity Press. • LEAN thinking _ Daniel T.Jone & James P. Womack • LEAN Kata_Carlos Martín Maroto • La máquina que cambio el mundo_ James P. Womack, Daniel T.Jones y Daniel Ross • Lean Manufacturing_ Patxi Madariaga