

[MHL201] MATERIALS ENGINEERING						
GENERAL INFORMATION						
Studies     UNIVERSITY MASTER IN INDUSTRIAL     Subject     ?       ENGINEERING     ************************************						
Semester 1 Course 1 Mention / Field of ???						
Character OPTIONAL Plan 2022 Medality Ecco to foco Language CASTELLANO						
Credite 3 Hours/week 1.67 Total hours 30 class hours + 45 por	n-class	e houre -	- 75 total			
hours of class hours + 45 hours	1-01233	5 110013 -	- <u>15 totai</u>			
2030 AGENDA GOALS						
HADRING TANDING 11   HADRING TANDING H						
PROFESSORS						
TATO VEGA, GUILSON						
AGINAGALDE LOPEZ, ANDREA						
LLAVORI OSA, IÑIGO						
Subjects Knowledge						
???? (No previous knowledge i	equire	ed)				
LEARNING RESULTS						
LEARNING RESULTS KC	SK	AB	1 08			
mechanical and microstructural characterization of materials and carrying them out in accordance with	~		1,00			
standard norms						
MHMP04 - To design and carry out machine tests predicting the chemical, physical and mechanical *						
MHRA22 - To demonstrate knowledge and capabilities to carry out verification and control of facilities,						
processes and products						
developing and/or applying ideas, often in a research context.						
MHR129 - To possess the learning skills that allow them to continue studying in a way that will be largely						
self-directed or autonomous						
	٦	Total:	3			
KC: Knowledge or Content / SK: Skills / AB: Abilities			5070			
ENALE LEARNING RESULTS	ionoo		ECTS			
inherent in their engineering speciality, allowing them to achieve the other competencies of the degree.	lience	s	0,30			
ENA124 - Knowledge and comprehension: Deep knowledge and comprehension of the engineering disciplines of their speciality, at the level necessary to acquire the rest of the competencies of the degree						
<b>ENA125</b> - Knowledge and comprehension: Critical Possession of avant-garde knowledge of their speciality.			0,3			
ENA126 - Knowledge and comprehension: Critical knowledge of the broad multidisciplinary context of engineering and the interrelations existing between the knowledge of the different fields.						
ENA130 - Analysis in engineering: Ability to identify, formulate and solve engineering problems in emerging areas of their speciality.						
ENA133 - Research and innovation: Ability to identify, find and obtain the required data.						
<b>ENA134</b> - Research and innovation: Ability to carry out bibliographic searches and consult and use databases and other information sources with discretion, in order to carry out simulations with the aim of conducting research on complex topics of their speciality.						
<b>ENA136</b> - Research and innovation: High-level capacity and ability to project and carry out experimental investigations, interpret data with criteria, and draw conclusions.						
<b>ENA140</b> - Practical application of engineering: Complete knowledge of application of materials, equipment and tools engineering technology and processes, and their limitations.	8,		0,3			
	т	otal	3			
SECONDARY LEARNING RESULTS			-			

RMH119 [!] Distingue los fenómenos de degradación por corrosión y desgaste de materiales



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## Goi Eskola Politeknikoa | Mondragon Unibertsitatea Course: 2024 / 2025 - Course planning



LEARNING ACTIVITIES			СН	NCH	ТН
Personal study and flexible development of concepts foster more meaningful learning	and subjects u	using active dynamics, to	2	28 h.	28 h.
Conducting tests, giving presentations, presenting de checkpoints	fences, taking	examinations and/or doing	2 h.		2 h.
Presentation by the teacher in the classroom, in partic procedures associated with the subjects	cipatory classe	s, of concepts and	10 h.		10 h.
Carrying out exercises and solving problems individually and/or in teams		8 h.	2 h.	10 h.	
EVALUATION SYSTEM	W	MAKE-UP MECHANISM	IS		
Individual written and/or oral tests or individual coding/programming tests	100%	Individual written and/or oral tests or individual coding/programming tests			
CH - Class hours: 20 h. NCH - Non-class hours: 30 h. TH - Total hours: 50 h.					

RMH118 [!] Comprende el comportamiento de los	s materiales a	fatiga			
LEARNING ACTIVITIES			СН	NCH	тн
Personal study and flexible development of concepts foster more meaningful learning	and subjects u	ising active dynamics, to	)	13 h.	13 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doin checkpoints			ng <sup>2 h.</sup>		2 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects			6 h.		6 h.
Carrying out exercises and solving problems individually and/or in teams		2 h.	2 h.	4 h.	
EVALUATION SYSTEM	W	MAKE-UP MECHAN	ISMS		
Individual written and/or oral tests or individual coding/orogramming tests	100%	Individual written and/or oral tests or individual coding/programming tests			

TH - Total hours: 25 h.

CONTENTS

1. Fatigue2. Corrosion3. Tribology

LEARNING RESOURCES AND BIBLIOGRAPHY					
Learning resources	Bibliography				
Subject notes Technical articles Labs Moodle Platform Class presentations	William D. Callister, Jr. "Introducción a la ciencia e ingeniería de los materiales". Tomo II. Ed. Reverté S.A.; Barcelona; 1996. Jean P. Mercier, Gérald Zambelli, Wilfried Kurz. "Introduction à la science des matériaux". Traité des Matériaux, Vol. 1. 3ème édition entièrement revue et augmentée. Presse Polytechniques et Universitaires Romandes. Lausanne.1999 James F. Shackelford. "Introducción a la ciencia de materiales para ingenieros". 4ª edición. Prentice Hall Iberia. Madrid. 1998. William F. Smith. "Fundamentos de la ciencia e ingeniería de				
	materiales". 3ª edición. McGraw Hill-Interramericana de España S.A.U. Madrid. 1998.				
	G. E. Dieter. "Mechanical Metallurgy". SI Metric				





Edition. Mc Graw-Hill Book Company, London. 1988.

N. E. Dowling. "Mechanical Behaviour of Materials. Engineering Methods for Deformation, Fracture and Fatigue". 2nd edition. Printice Hall. 1999.

S. Suresh. Fatigue of materials. 2nd edition. Cambridge University Press. 1998. ISBN 0-521-57847-7.

D. Landolt. "Corrosion et chimie de surfaces des matériaux". Traité des Matériaux, Vol. 12. Reimpression corrigée. Presse Polytechniques et Universitaires Romandes. Lausanne, 1997.

D. Landolt. "Corrosion and Surface chemistry of metals". 1st edition. EPFL Press. Lausanne, 2007.