

Goi Eskola Politeknikoa Escuela Politécnica

		GENEF	RAL INF	ORMATION			
Studies	DEGREE IN M	ECHATRONICS ENGINEER	RING	Subject	?		
Semester	1	Course 1		Mention / Field of			
Character	OPTIONAL			specialisation			
Plan	2020	Modality Face-t	o-face	Language	EUSKARA/CAS	TELLANO	
Credits	6	Hours/week 5		Total hours	90 class hours + <u>hours</u>	- 60 non-class	hours = <u>150 tot</u>
		P	ROFES	SORS			
BASAURI L	ARRAÑAGA, IE	BAI					
OROBENG	OA GURIDI, DA	NEL					
AZPI-AURT	ENETXE, JON	(SOMORROSTRO)					
		REQUIRED I	PREVIC	US KNOWLED	GE		
	Sub	ojects			Knowle	edge	
(No	o specific previo	us subjects required)		(/	lo previous knov	vledge require	d)
			SKIL	.LS			
ERIFICA SKILL	S						
PECIFIC							
JCE23 - Applied	knowledge of n	naterials engineering, metrol	ogy, and	industrial fluid syster	ns		
ENERAL	5	G G					
ICG03 - Addres	sing and optimis	sing activities of assembly, c	ommissio	ning, assistance and	I maintenance of	facilities, mad	chinery, and
dustrial mechati	ronic systems						
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JCTR2 - 10 be a vironments call	able to understa ling for creative	nd and apply knowledge to p and innovative ideas, using	oroblem so self-devel	olving in complex wo	ork situations or s horocedures:	pecialised and	d professional
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Course: 2022 / 2023 - Course planning

Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence

Comments: With the oral presentation of the project of the second semester

CH - Class hours: 1 h. NCH - Non-class hours: 2 h. TH - Total hours: 3 h.

RGJ191 They use the right methodology to find solutions to problems and to develop projects: analyse problems properly, look for meaningful information to face them and propose solutions.

LEARNING ACTIVITIES			СН	NCH	TH
Development, writing and presentation of memorandums, re Relating to projects/POPBLs carried out individually or in tea	eports, a ams	udiovisual material, etc.	2 h.	2 h.	4 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANIS	SMS		
Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence		Technical skills, involve results, handed docum defence	ement in the entation, pr	e project, finish esentation and	ed work, obtaine I technical
		Comments: With the p	project of the	e second seme	ester

CH - Class hours: 2 h. NCH - Non-class hours: 2 h. TH - Total hours: 4 h

TH - Total hours: 4 h.

RGJ192 They use the right methodology to find solutions to problems and to develop projects: analyse problems properly, look for meaningful information to face them and propose solutions.

LEARNING ACTIVITIES			СН	NCH	IH
Development, writing and presentation of memorandums, re Relating to projects/POPBLs carried out individually or in tea	eports, a ams	udiovisual material, etc.	2 h.	2 h.	4 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANIS	MS		
Technical skills, involvement in the project, finished work, 100% Technical defence defence		Technical skills, involve results, handed docum defence	ement in the entation, pr	e project, finish esentation and	ed work, obtaine I technical
		Comments: With the p	roject of the	e second seme	ester

CH - Class hours: 2 h. NCH - Non-class hours: 2 h. TH - Total hours: 4 h.

RGJ1111 They identify the components and describe the functions they perform in a fluid power system, understanding the circuits and diagrams in which they are displayed.

LEARNING ACTIVITIES	СН	NCH	ТН
Development, writing and presentation of memorandums, reports, audiovisual material, etc. Relating to projects/POPBLs carried out individually or in teams	3 h.	2 h.	5 h.
Individual study and work, tests and evaluations and check points	2 h.	8 h.	10 h.
Presentation of the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	19 h.	6 h.	25 h.
Individual and team exercises	4 h.	2 h.	6 h.

Course: 2022 / 2023 - Course planning

Individual or team workshop and/or lab practice		4 h. 2 h. 6 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Individual written and oral tests to assess technical skills of the subject	63%	Individual written and oral tests to assess technical skills of the subject
Reports of solving exercises, case studies, computer practices, simulation practices and laboratory practices	27%	Comments: If a retake exam is needed, the mark will be calculated 25% first exam 75% retake
Technical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and technical defence	10%	
CH - Class hours: 32 h. NCH - Non-class hours: 20 h. TH - Total hours: 52 h.		

RGJ1112 They know and apply the measurement and control techniques and devices used in the manufacturing industry.

LEARNING ACTIVITIES				NCH	11
Development, writing and presentation of memorandums, re Relating to projects/POPBLs carried out individually or in te	eports, ams	audiovisual material, etc.	3 h.		3 h.
Presentation of the teacher in the classroom, in participator procedures associated with the subjects	y classe	es, of concepts and	2 h.	1 h.	3 h.
Individual or team workshop and/or lab practice			6 h.	3 h.	9 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANIS	MS		
Reports of solving exercises, case studies, computer practices, simulation practices and laboratory practices	90%	Individual written and o subject	ral tests to	assess technic	cal skills of the
Fechnical skills, involvement in the project, finished work, obtained results, handed documentation, presentation and echnical defence	10%	Comments: If a retake calculated 25% first exar	exam is ne n 75% reta	eded, the mar ke	k will be

CH - Class hours: 11 h. NCH - Non-class hours: 4 h. TH - Total hours: 15 h.

RGJ1113 They identify the components and describe the functions they perform in a fluid power system, understanding the circuits and diagrams in which they are displayed.

LEARNING ACTIVITIES			СН	NCH	ТН
Development, writing and presentation of memorandums, reports, audiovisual material, etc. Relating to projects/POPBLs carried out individually or in teams			4 h.	3 h.	7 h.
Individual study and work, tests and evaluations and check	points		2 h.	10 h.	12 h.
Presentation of the teacher in the classroom, in participatory procedures associated with the subjects	/ classe	es, of concepts and	16 h.	2 h.	18 h.
Individual and team exercises			8 h.	7 h.	15 h.
Individual or team workshop and/or lab practice			10 h.	6 h.	16 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANIS	MS		
Individual written and oral tests to assess technical skills of the subject	63%	Individual written and o subject	ral tests to a	assess technic	cal skills of the
Reports of solving exercises, case studies, computer practices, simulation practices and laboratory practices	27%	Comments: If a retake calculated 25% first exar	exam is neo n 75% retak	eded, the mar	k will be
Technical skills, involvement in the project, finished work,	10%				

CH - Class hours: 40 h.

technical defence

NCH - Non-class hours: 28 h.

obtained results, handed documentation, presentation and

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Course: 2022 / 2023 - Course planning

TH - Total hours: 68 h.

CONTENTS

The subject Mechanical Technology is composed of three well-differentiated sections: 1. MATERIALS

- Metal alloys
- * Steels, cast irons and their designations
- * Heat and surface treatments for steels
- * Non ferrous metals
- Plastics
- * Clasification and structure
- * Mechanical properties
- * Physical properties

- Tests

- * Mechanical tests
- * Nondestructive testing

2. METROLOGY

-Precision

- -Dimensional measuring devices: rulers, calipers, micrometers
- -Dial gauge, gauges and reference patterns

-Rugosimeters

3. FLUIDS

- -Industrial applications
- -Fluid power transmission (pneumatics and hydraulics).

-Drives

- -Valves and pumps
- -Air pressure instalations
- -Pneumatic and hydraulic accumulators
- -Industrial machinery hydraulic circuits (interpretation and design)

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Topic related web quires Labs Moodle Platform Video projections Lab practical training Slides of the subject	CALLISTER Jr., W.D. 2011. Materialen Zientzia eta IngeniaritzaHastapenak. Euskal Herriko Unibertsitateko Argitalpen Zerbitzua ILANGO, S., SOUNDARARAJAN, V. 2007. Introduction to hydraulicsand pneumatics. PHI Learning Pvt. Ltd RABIE, M. 2009. Fluid Power Engineering. McGraw-Hill. MORO, M. 2017. Fundamentos de Metrología Dimensional.Marcombo Universitari
	LORIENTE, O; GONZALEZ, E., TRULL, O. 2013. Verificación yMetrología. Libro de Prácticas. Lulu
	http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_ln k.pl?grupo=MECATRONICA11&ejecuta=30&_ST