

Goi Eskola Politeknikoa Escuela Politécnica

perior	[GJG101] MANUFACT				
	GENERAL IN		NOLOGI		
Ctudies DECDEE IN M			2		
Studies DEGREE IN M	ECHATRONICS ENGINEERING Course 1	Subject Mention / Field of			
Character OPTIONAL	Course	specialisation			
Plan 2020	Modality Face-to-face		CASTELLANO/E		
Credits 6	Hours/week 5		90 class hours +		hours - 150 tot
oreans o	Hours/week 3	rotal nours	hours	00 11011-01255 1	10013 = <u>130 tot</u>
	PROFES	SSORS			
ARISTIMUÑO OSORO, PA	TXI XABIER				
MENDIGUREN OLAETA, J	OSEBA				
PLATA REDONDO, GORK	A				
DOK-GARCIA MICHELENA	A, PABLO				
AZPI-LOPEZ, ANGEL (SOI	MORROSTRO)				
LUENGO TESOURO, IVAN	1				
	REQUIRED PREVIO		GE		
	jects		Knowle	-	
(No specific previo	us subjects required)	(1)	No previous knowl	ledge required	)
	SKIL	LS			
ERIFICA SKILLS					
PECIFIC					
JCE21 - To know the fundament	als of manufacturing and production	systems.			
ENERAL					
	sing activities of assembly, commission	oning, assistance and	d maintenance of f	facilities, mach	ninery, and
ndustrial mechatronic systems					
DOCC					
	ad and apply knowledge to problem a	olving in complex we	ark aituationa ar ar	anialized and	profossional
JCTR2 - To be able to understar	nd and apply knowledge to problem s and innovative ideas, using self-deve			pecialised and	professional
	nd and apply knowledge to problem s and innovative ideas, using self-deve			pecialised and	professional
GJCTR2 - To be able to understan nvironments calling for creative BASIC		loped arguments and	d procedures;		professional
GJCTR2 - To be able to understan nvironments calling for creative BASIC	and innovative ideas, using self-devening abilities required to embark on su	loped arguments and ubsequent studies wi	d procedures;		professional
GJCTR2 - To be able to understan invironments calling for creative BASIC	and innovative ideas, using self-deve	loped arguments and ubsequent studies wi	d procedures;		professional
GJCTR2 - To be able to understan invironments calling for creative BASIC	and innovative ideas, using self-devening abilities required to embark on su	loped arguments and ubsequent studies wi	d procedures;		professional
<b>BJCTR2</b> - To be able to understan nvironments calling for creative <b>BASIC</b> <b>5_CB5</b> - To have developed learn	and innovative ideas, using self-deven ning abilities required to embark on su LEARNING	loped arguments and ubsequent studies wi	d procedures; ith a high level of a	autonomy.	
BJCTR2 - To be able to understan nvironments calling for creative BASIC B_CB5 - To have developed learn RGJ181 They communicate,	and innovative ideas, using self-devening abilities required to embark on su	loped arguments and ubsequent studies wi RESULTS nation: they write a	d procedures; ith a high level of a clear and concis	autonomy.	
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BJCTR2 - To be able to understarnvironments calling for creative         ASIC         G_CB5 - To have developed learn         RGJ181 They communicate, he criteria established in the group communicate in the group communicate of the criteria established in the group component and writing of recreation projects/work experience/challe individually and/or in teams         EVALUATION SYSTEM         Reports on the completion of exercises, term projects, challe         CH - Class hours: 2 h.         CH - Class hours: 2 h.         CH - Total hours: 3 h.	and innovative ideas, using self-development ing abilities required to embark on su LEARNING search and structure written inform guide for written reports using the ords, reports, presentations, audiovis enges/case studies/experimental inve w xercises, case studies, 100% exercises, laboratory	loped arguments and ubsequent studies wi RESULTS nation: they write a appropriate softwar sual material, etc. on stigations carried our <u>MAKE-UP MECH</u> Comments: Revis semester project	d procedures; ith a high level of a clear and concis re. CH 2 h. t MNISMS (No mecha sion and correction	autonomy. se project rep <u>NCH</u> 1 h. nisms) n of the writter	bort following TH 3 h.
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FJCTR2 - To be able to understarnvironments calling for creative         SASIC         G_CB5 - To have developed learn         REJ181 They communicate, the criteria established in the group of the criteria establish	and innovative ideas, using self-dever hing abilities required to embark on su LEARNING search and structure written inform guide for written reports using the ords, reports, presentations, audiovis enges/case studies/experimental inve w xercises, case studies, 100% exercises, laboratory nges and problems search and structure orally the info	Ioped arguments and ubsequent studies wi RESULTS mation: they write a appropriate softwar sual material, etc. on stigations carried our <u>MAKE-UP MECH</u> Comments: Revis semester project	d procedures; ith a high level of a clear and concis re. <i>CH</i> 2 h. t MNISMS ( <i>No mecha</i> sion and correction they make a clear	autonomy. se project rep <u>NCH</u> 1 h. nisms) n of the writter ar and concis	oort following TH 3 h. a report of the e oral
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kola nnikoa la Politécnica					
<sup>ior</sup> Development and writing of records, reports, presentations, projects/work experience/challenges/case studies/experime			2 h.	2 h.	4 h.
ndividually and/or in teams					
EVALUATION SYSTEM Presentation and defence of exercises, case studies,	₩ 100%	MAKE-UP MECHANIS		aniama)	
resentation and define of exercises, case studies, computer practical work, simulation practical work, aboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	100 /0	Comments: Continuou	(No mech Is assessme	,	not foreseen.
H - Class hours: 2 h. CH - Non-class hours: 2 h. H - Total hours: 4 h.					
<b>GJ191</b> They use the right methodology to find solutio ok for meaningful information to face them and propos			projects: ai	nalyse proble	ms properly,
			СН	NCH	тн
LEARNING ACTIVITIES Carrying out/resolving projects/challenges/cases, etc. to pro	ovide sol	utions to problems in	2 h.	2 h.	4 h.
nterdisciplinary contexts, real and/or simulated, individually					
EVALUATION SYSTEM Dbservation (technical capacity, attitude and participation)	<b>W</b> 100%	MAKE-UP MECHANIS	MS (No mech		
H - Class hours: 2 h.					
CH - Non-class hours: 2 h.					
CH - Non-class hours: 2 h. H - Total hours: 4 h. RGJ192 They use the right methodology to find solutio			projects: ar	nalyse proble	ms properly,
CH - Non-class hours: 2 h. H - Total hours: 4 h. RGJ192 They use the right methodology to find solutio bok for meaningful information to face them and propos			projects: al CH	nalyse probler NCH	ms properly, <i>TH</i>
CH - Non-class hours: 2 h. H - Total hours: 4 h. RGJ192 They use the right methodology to find solutio bok for meaningful information to face them and propos LEARNING ACTIVITIES Carrying out/resolving projects/challenges/cases, etc. to pro	se solution	ons. utions to problems in			
CH - Non-class hours: 2 h. H - Total hours: 4 h. RGJ192 They use the right methodology to find solution took for meaningful information to face them and propose LEARNING ACTIVITIES Carrying out/resolving projects/challenges/cases, etc. to pro- interdisciplinary contexts, real and/or simulated, individually	se solution	ons. utions to problems in	СН 2 h.	NCH	тн
CH - Non-class hours: 2 h. H - Total hours: 4 h.	ovide sol and/or i <u>w</u> 30%	ons. utions to problems in n teams MAKE-UP MECHANIS	CH 2 h. SMS (No mech	NCH 2 h. anisms)	<b>TH</b> 4 h.
CH - Non-class hours: 2 h. H - Total hours: 4 h.	e solution povide sol prand/or i w	utions to problems in n teams	CH 2 h. SMS (No mech	NCH 2 h. anisms)	<b>TH</b> 4 h.
CH - Non-class hours: 2 h. 1 - Total hours: 4 h. CGJ192 They use the right methodology to find solution ok for meaningful information to face them and propose LEARNING ACTIVITIES Carrying out/resolving projects/challenges/cases, etc. to pro- nterdisciplinary contexts, real and/or simulated, individually EVALUATION SYSTEM Self-assessment Co-assessment Observation (technical capacity, attitude and participation) H - Class hours: 2 h. CH - Non-class hours: 2 h.	ovide sol and/or i <u>w</u> 30% 35%	ons. utions to problems in n teams MAKE-UP MECHANIS	CH 2 h. SMS (No mech	NCH 2 h. anisms)	<b>TH</b> 4 h.
CH - Non-class hours: 2 h. H - Total hours: 4 h. RGJ192 They use the right methodology to find solution book for meaningful information to face them and propose LEARNING ACTIVITIES Carrying out/resolving projects/challenges/cases, etc. to pro- interdisciplinary contexts, real and/or simulated, individually EVALUATION SYSTEM Self-assessment Co-assessment Observation (technical capacity, attitude and participation) H - Class hours: 2 h. CH - Non-class hours: 2 h. H - Total hours: 4 h. RGJ1011 They acquire knowledge about forming proce	vide solution vand/or i vand/or i vand/or i vand/or i vand/or i	ons. utions to problems in n teams <u>MAKE-UP MECHANIS</u> Comments: Continuou	CH 2 h. SMS (No mech is assessme	NCH 2 h. anisms) ent. Retake is n	TH 4 h.
CH - Class hours: 2 h. ACH - Non-class hours: 2 h. H - Total hours: 4 h. RGJ192 They use the right methodology to find solution cook for meaningful information to face them and propose LEARNING ACTIVITIES Carrying out/resolving projects/challenges/cases, etc. to pro- interdisciplinary contexts, real and/or simulated, individually EVALUATION SYSTEM Self-assessment Co-assessment Observation (technical capacity, attitude and participation) CH - Class hours: 2 h. CH - Non-class hours: 2 h. H - Total hours: 4 h. RGJ1011 They acquire knowledge about forming proce- barameters.	vide solution vand/or i vand/or i vand/or i vand/or i vand/or i	ons. utions to problems in n teams <u>MAKE-UP MECHANIS</u> Comments: Continuou	CH 2 h. SMS (No mech is assessme	NCH 2 h. anisms) ent. Retake is n	TH 4 h.
ICH - Non-class hours: 2 h.         'H - Total hours: 4 h.         RGJ192         They use the right methodology to find solution book for meaningful information to face them and propose         LEARNING ACTIVITIES         Carrying out/resolving projects/challenges/cases, etc. to prointerdisciplinary contexts, real and/or simulated, individually         EVALUATION SYSTEM         Self-assessment         Co-assessment         Observation (technical capacity, attitude and participation)         CH - Class hours: 2 h.         ICH - Non-class hours: 2 h.         'H - Total hours: 4 h.         RGJ1011         They acquire knowledge about forming process	vide solution vand/or i vand/or i vand/or i vand/or i vand/or i	ons. utions to problems in n teams <u>MAKE-UP MECHANIS</u> Comments: Continuou	CH 2 h. SMS (No mech is assessme	NCH 2 h. anisms) ent. Retake is n	TH 4 h.

projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams Personal study and flexible development of concepts and subjects using active dynamics, to 4 h. 18 h. 22 h. foster more meaningful learning



Course: 2022 / 2023 - Course planning

EVALUATION SYSTEM	W	MAKE-UP MECHAN	NISMS		
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 Individual written and/or oral tests or individual coding/programming tests	20%	<b>Comments:</b> Final ex mark	(No mech xam mark: 75%	,	, %25 the initia
H - Class hours: 25 h. CH - Non-class hours: 25 h. H - Total hours: 50 h.					
RG 1012 They acquire knowledge about machining n	rocesse	s understanding their	advantages I	imitations an	d main proces
arameters.	processe	s, understanding their	advantages, I <i>CH</i>	imitations an NCH	d main proces TH
arameters. LEARNING ACTIVITIES Presentation by the teacher in the classroom, in participat					
Arameters. LEARNING ACTIVITIES Presentation by the teacher in the classroom, in participat procedures associated with the subjects	tory class	es, of concepts and	сн	псн	тн
RGJ1012 They acquire knowledge about machining p arameters. LEARNING ACTIVITIES Presentation by the teacher in the classroom, in participat procedures associated with the subjects Practical work in workshops and/or laboratories, individua EVALUATION SYSTEM	tory class	es, of concepts and	<u>Сн</u> 20 h. 12 h.	<b>NCH</b> 5 h.	<b>ТН</b> 25 h.
Arameters.	tory class ally and/or	es, of concepts and	CH 20 h. 12 h. NISMS d/or oral tests tests	NCH 5 h. 13 h. or individual	<i>TH</i> 25 h. 25 h.

CH - Class hours: 32 h. NCH - Non-class hours: 18 h. TH - Total hours: 50 h.

EARNING ACTIVITIES			СН	NCH	тн
arrying out/resolving projects/challenges/cases, etc. to paterdisciplinary contexts, real and/or simulated, individua		•	25 h.	10 h.	35 h.
EVALUATION SYSTEM	W	MAKE-UP MECHAN	SMS		
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, aboratory practical work, term projects, end of degree project, master's thesis, challenges and problems	100%	Comments: Continuc	(No mecha ous assessme	,	not foreseen.

CONTENTS

## <u>Forming</u>

-Sheet metal forming-Casting

## Machining



-Turning-Milling-Drilling-Basic cutting tools-Basic cutting conditions-Process sheets-CNC

## LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes Video projections	Fundamentals of Modern Manufacturing. Materials, Processes and Systems. Mikell P. Groover.
Lab practical training	Kalpakjian, S., Schmid, R.S. Manufacturing Engineering and Technology. Prentice Hall, New Jersey, 2000. ISBN: 978-0133128741
	http://katalogoa.mondragon.edu/janium-bin/janium_login_opac_re_ln k.pl?grupo=MECATRONICA12&ejecuta=25&_ST