

Course: 2023 / 2024 - Course planning

Goi Eskola Politeknikoa Escuela Politécnica Superior

	[GIG301] DIGIT	AL ELE	ECTRONIC S	YSTEMS			
	GENE		FORMATION				
Studies DEGREE IN CO	MPUTER ENGINEERING	G	Subject	COMPUTER I	ENGINEERI	NG	
Semester 2	Course 1		Mention / Field of				
Character BASIC TRAININ	G		specialisation				
<b>Plan</b> 2022	Modality Face	e-to-face	Language	EUSKARA			
Credits 6	Hours/week 5.44		Total hours	98 class hours hours	s + 52 non-c	lass hours	= <u>150 total</u>
		PROFE	SSORS				
ANTIA JUARISTI, ANE							
MARTINEZ DE MENDIVIL V	ARAS, JON						
	REQUIRED	PREVIC	OUS KNOWLED	GE			
Subje	ects			Knov	vledge		
(No specific previous	subjects required)		(1	Vo previous kn	owledge req	uired)	
	LEA	ARNING	RESULTS				
LEARNING RESULTS					KC SK	AB	ECTS
GIR104 - To know the fundamentals	of semiconductors, logic	c families a	nd electronic devices	s and design	x		5,4
G-RTR1 - To develop interdisciplina	ngineering problems.	ir specialty	and of gradual com	olexity	x		0,28
becoming aware of respect for hum	an rights and fundament	al rights, a	nd analyzing and ass	sessing the			
impact of the proposed solutions or	the SDGs - to acquire a	ind/or apply	y basic, advanced an	id /or			
with a high degree of autonomy		inary team		untiler studies			
G-RTR2 - To express information, ic	eas and the arguments t	that suppor	t them in an orderly,	clear and	x		0,32
coherent manner, orally and in writi	ng, based on quality info	rmation, se	elf-made or obtained	from different			
						_	
KC: Knowledge or Content / SK: Skills / AB:	Abilities					Total:	6
No. Nilowicige of Content / CN. Okins / AD.	SECONDA						
		RVIEA	RNING RESULT	5			
	SECONDA	ARY LEA	RNING RESULT	ſS			
	SECONDA	RY LEA	RNING RESULT	ſS		_	
RGI190 [!] Conocer y aplicar la	SECONDA	ARY LEA	RNING RESULT	ΓS bjetivos y la p	lanificación	previame	ente
RGI190 [!] Conocer y aplicar la definidos, un proyecto de comp	SECONDA es fases para desarrolla lejidad técnica acorde d	ARY LEA ar de form con los co	RNING RESULT a guiada, con los ol procimientos de for	ΓS bjetivos y la p mación básica	lanificación a de la inge	previame niería. Re	ente flexiona
<b>RGI190</b> [!] Conocer y aplicar la definidos, un proyecto de comp sobre los cono	seconda lejidad técnica acorde	ARY LEA	RNING RESULT a guiada, con los ol onocimientos de for	ΓS bjetivos y la p mación básica	lanificación a de la inge	previame niería. Re	ente flexiona
<b>RGI190</b> [!] Conocer y aplicar la definidos, un proyecto de comp sobre los cono	s fases para desarrolla lejidad técnica acorde o	ARY LEA	RNING RESULT a guiada, con los ol onocimientos de for	ΓS bjetivos y la p mación básica	lanificación a de la inge	previame niería. Re	ente flexiona
RGI190 [!] Conocer y aplicar la definidos, un proyecto de comp sobre los cono LEARNING ACTIVITIES	SECONDA es fases para desarrolla lejidad técnica acorde d	ARY LEA	RNING RESULT a guiada, con los ol nocimientos de for	TS bjetivos y la p mación básica CH	lanificación a de la inge NCH	previame niería. Re	ente flexiona H
RGI190       [!] Conocer y aplicar la definidos, un proyecto de comp sobre los cono         LEARNING ACTIVITIES         Carrying out/resolving projects/cl	s fases para desarrolla lejidad técnica acorde d	ar de form con los co	RNING RESULT a guiada, con los ol procimientos de for utions to problems in	TS bjetivos y la p mación básica CH 3 h.	lanificación a de la inge NCH 1 h.	previame niería. Re 1	ente flexiona H
RGI190       [!] Conocer y aplicar la definidos, un proyecto de comp sobre los cono         LEARNING ACTIVITIES         Carrying out/resolving projects/cl interdisciplinary contexts, real and the second s	s fases para desarrolla lejidad técnica acorde d nallenges/cases, etc. to p d/or simulated, individua	ar de form con los co provide sol	RNING RESULT a guiada, con los ol procimientos de for utions to problems in n teams	FS bjetivos y la p mación básica CH 3 h.	lanificación a de la inge <u>NCH</u> 1 h.	previame niería. Re 1 4	ente flexiona H
RGI190       [!] Conocer y aplicar la definidos, un proyecto de comp sobre los cono         LEARNING ACTIVITIES         Carrying out/resolving projects/cl interdisciplinary contexts, real an EVALUATION SYSTEM	as fases para desarrolla lejidad técnica acorde d nallenges/cases, etc. to p d/or simulated, individua	ARY LEA ar de form con los co provide sol lly and/or i W	RNING RESULT a guiada, con los ol procimientos de for utions to problems in n teams MAKE-UP MECH	FS bjetivos y la p mación básica CH 3 h. ANISMS	lanificación a de la inge <u>NCH</u> 1 h.	previame niería. Re 1 4	ente flexiona H h.
RGI190       [!] Conocer y aplicar la definidos, un proyecto de composobre los cono         LEARNING ACTIVITIES         Carrying out/resolving projects/cl interdisciplinary contexts, real an EVALUATION SYSTEM         Reports on the completion of exercise	as fases para desarrolla lejidad técnica acorde d nallenges/cases, etc. to p d/or simulated, individua	ar de form con los co provide sol lly and/or i <u>w</u> 20%	RNING RESULT a guiada, con los ol procimientos de for utions to problems in n teams <u>MAKE-UP MECH</u>	TS bjetivos y la p mación básica CH 3 h. ANISMS (No med	lanificación a de la inge <u>NCH</u> 1 h. shanisms)	previame niería. Re 1 4	ente flexiona H h.
RGI190       [!] Conocer y aplicar la definidos, un proyecto de comp sobre los cono         LEARNING ACTIVITIES         Carrying out/resolving projects/cl interdisciplinary contexts, real an EVALUATION SYSTEM         Reports on the completion of exercises, simulation of exercises, term projects, challender	s fases para desarrolla lejidad técnica acorde d nallenges/cases, etc. to p d/or simulated, individua ercises, case studies, xercises, laboratory	ARY LEA ar de form con los co provide sol lly and/or i <u>w</u> 20%	RNING RESULT a guiada, con los ol procimientos de for utions to problems in n teams <u>MAKE-UP MECH</u>	TS bjetivos y la p mación básica CH 3 h. ANISMS (No med	lanificación a de la inge <u>NCH</u> 1 h. chanisms)	previame niería. Re 1 4	ente flexiona H h.
RGI190       [!] Conocer y aplicar la definidos, un proyecto de comp sobre los cono         LEARNING ACTIVITIES         Carrying out/resolving projects/cl interdisciplinary contexts, real an EVALUATION SYSTEM         Reports on the completion of exercises, simulation e exercises, term projects, challeng Presentation and defence of exercise	s fases para desarrolla lejidad técnica acorde d nallenges/cases, etc. to p d/or simulated, individua prcises, case studies, xercises, laboratory ges and problems roises, case studies.	ar de form con los co provide sol Ily and/or i <u>W</u> 20%	RNING RESULT a guiada, con los ol onocimientos de for utions to problems in n teams <u>MAKE-UP MECH</u>	FS bjetivos y la p mación básica CH 3 h. 3 h. ANISMS (No mec	lanificación a de la inge <u>NCH</u> 1 h. shanisms)	previame niería. Re T 4	ente flexiona H h.
RGI190       [!] Conocer y aplicar la definidos, un proyecto de composobre los cono         LEARNING ACTIVITIES         Carrying out/resolving projects/cl interdisciplinary contexts, real an EVALUATION SYSTEM         Reports on the completion of exercises, term projects, challeng Presentation and defence of exercisendary computer practical work, simulation	es fases para desarrolla lejidad técnica acorde d nallenges/cases, etc. to p d/or simulated, individua ercises, case studies, xercises, laboratory ges and problems rcises, case studies, on practical work,	ARY LEA ar de form con los co provide sol lly and/or i <u>W</u> 20% 50%	RNING RESULT a guiada, con los ol onocimientos de for utions to problems in n teams <u>MAKE-UP MECH</u>	FS bjetivos y la p mación básica CH 3 h. ANISMS (No med	lanificación a de la inge <u>NCH</u> 1 h. chanisms)	previame niería. Re 1 4	ente flexiona H h.
RGI190       [!] Conocer y aplicar la definidos, un proyecto de composobre los cono         LEARNING ACTIVITIES         Carrying out/resolving projects/cl interdisciplinary contexts, real an evaluation exercises, term projects, challenge         Reports on the completion of exercises, term projects, challenge         Presentation and defence of exe computer practical work, simulation to a project matter's thesis, challenge	seconda s fases para desarrolla lejidad técnica acorde d nallenges/cases, etc. to p d/or simulated, individua ercises, case studies, xercises, laboratory ges and problems roises, case studies, on practical work, ojects, end of degree es and problems	ARY LEA ar de form con los co provide sol lly and/or i <u>w</u> 20% 50%	RNING RESULT a guiada, con los ol procimientos de for utions to problems in n teams <u>MAKE-UP MECH</u>	TS bjetivos y la p mación básica CH 3 h. ANISMS (No med	lanificación a de la inge <u>NCH</u> 1 h. shanisms)	previame niería. Re <u>T</u> 4	ente flexiona H h.
RGI190       [!] Conocer y aplicar la definidos, un proyecto de comp sobre los cono         LEARNING ACTIVITIES         Carrying out/resolving projects/cl interdisciplinary contexts, real an         EVALUATION SYSTEM         Reports on the completion of exercises, term projects, challeng         Presentation and defence of exe computer practical work, simulatil laboratory practical work, term project, master's thesis, challeng         Prototype / Product	s fases para desarrolla lejidad técnica acorde d nallenges/cases, etc. to p d/or simulated, individua ercises, case studies, xercises, laboratory ges and problems rcises, case studies, on practical work, ojects, end of degree es and problems	ARY LEA ar de form con los co provide sol lly and/or i <u>w</u> 20% 50% 30%	RNING RESULT a guiada, con los ol onocimientos de for utions to problems in n teams <u>MAKE-UP MECH</u>	FS bjetivos y la p mación básica CH 3 h. 3 h. ANISMS (No med	lanificación a de la inge <u>NCH</u> 1 h.	previame niería. Re <u>T</u> 4	ente flexiona H h.
RGI190       [!] Conocer y aplicar la definidos, un proyecto de comp sobre los cono         LEARNING ACTIVITIES         Carrying out/resolving projects/cl interdisciplinary contexts, real and         EVALUATION SYSTEM         Reports on the completion of exec computer exercises, simulation exercises, term projects, challeng         Presentation and defence of exe computer practical work, simulati laboratory practical work, term pr project, master's thesis, challeng         Prototype / Product         Comments: Continuous assessments	es fases para desarrolla lejidad técnica acorde d nallenges/cases, etc. to p d/or simulated, individua ercises, case studies, xercises, laboratory ges and problems rcises, case studies, on practical work, ojects, end of degree es and problems nent.	ARY LEA ar de form con los co provide sol lly and/or i W 20% 50% 30%	RNING RESULT a guiada, con los ol onocimientos de for utions to problems in n teams <u>MAKE-UP MECH</u>	FS bjetivos y la p mación básica CH 3 h. 3 h. ANISMS (No mec	lanificación a de la inge <u>NCH</u> 1 h.	previame niería. Re T 4	ente flexiona H h.
RGI190       [!] Conocer y aplicar la definidos, un proyecto de comp sobre los cono         LEARNING ACTIVITIES         Carrying out/resolving projects/cl interdisciplinary contexts, real an EVALUATION SYSTEM         Reports on the completion of exe computer exercises, simulation e exercises, term projects, challeng Presentation and defence of exe computer practical work, simulati laboratory practical work, term pr project, master's thesis, challeng Prototype / Product         Comments: Continuous assess	es fases para desarrolla lejidad técnica acorde d nallenges/cases, etc. to p d/or simulated, individua ercises, case studies, xercises, laboratory ges and problems rcises, case studies, on practical work, ojects, end of degree es and problems nent.	ARY LEA	RNING RESULT a guiada, con los ol onocimientos de for utions to problems in n teams <u>MAKE-UP MECH</u>	rs bjetivos y la p mación básica CH 3 h. ANISMS (No med	lanificación a de la inge <u>NCH</u> 1 h.	previame niería. Re 1 4	ente flexiona H h.
RGI190       [!] Conocer y aplicar la definidos, un proyecto de composobre los cono         LEARNING ACTIVITIES         Carrying out/resolving projects/cl interdisciplinary contexts, real an         EVALUATION SYSTEM         Reports on the completion of execomputer exercises, simulation exercises, term projects, challeng         Presentation and defence of execomputer practical work, simulatil laboratory practical work, term project, master's thesis, challeng         Prototype / Product         Comments: Continuous assessments	as fases para desarrolla lejidad técnica acorde d nallenges/cases, etc. to p d/or simulated, individua rrcises, case studies, xercises, laboratory ges and problems rcises, case studies, on practical work, ojects, end of degree es and problems nent.	ARY LEA	RNING RESULT a guiada, con los ol onocimientos de for utions to problems in n teams <u>MAKE-UP MECH</u>	r <u>S</u> bjetivos y la p mación básica CH 3 h. ANISMS (No med	lanificación a de la inge <u>NCH</u> 1 h.	previame niería. Re <u>T</u>	ente flexiona H h.
RGI190       [!] Conocer y aplicar la definidos, un proyecto de comp sobre los cono         LEARNING ACTIVITIES         Carrying out/resolving projects/cl interdisciplinary contexts, real an EVALUATION SYSTEM         Reports on the completion of execomputer exercises, simulation e exercises, term projects, challeng         Presentation and defence of exe computer practical work, simulatil laboratory practical work, term priproject, master's thesis, challeng         Prototype / Product         Comments: Continuous assess         CH - Class hours: 3 h.         NCH - Non-class hours: 1 h.	es fases para desarrolla lejidad técnica acorde d nallenges/cases, etc. to p d/or simulated, individua ercises, case studies, xercises, laboratory ges and problems rcises, case studies, on practical work, ojects, end of degree es and problems nent.	ARY LEA	RNING RESULT a guiada, con los ol procimientos de for utions to problems in n teams <u>MAKE-UP MECH</u>	FS bjetivos y la p mación básica CH 3 h. ANISMS (No med	lanificación a de la inge <u>NCH</u> 1 h.	previame niería. Re <u>T</u> 4	ente flexiona H h.
RGI190       [!] Conocer y aplicar la definidos, un proyecto de comp sobre los cono         LEARNING ACTIVITIES         Carrying out/resolving projects/cl interdisciplinary contexts, real and         EVALUATION SYSTEM         Reports on the completion of execomputer exercises, simulation exercises, term projects, challeng         Presentation and defence of execomputer practical work, simulatilaboratory practical work, term priorigect, master's thesis, challeng         Prototype / Product         Comments: Continuous assessments         CH - Class hours: 3 h.         NCH - Non-class hours: 1 h.         TH - Total hours: 4 h.	s fases para desarrolla lejidad técnica acorde d nallenges/cases, etc. to p d/or simulated, individua ercises, case studies, xercises, laboratory ges and problems rcises, case studies, on practical work, ojects, end of degree es and problems nent.	ARY LEA ar de form con los co provide sol lly and/or i <u>W</u> 20% 50% 30%	RNING RESULT a guiada, con los ol onocimientos de for utions to problems in n teams <u>MAKE-UP MECH</u>	rs bjetivos y la p mación básica CH 3 h. ANISMS (No mec	lanificación a de la inge <u>NCH</u> 1 h.	previame niería. Re <u>T</u>	ente flexiona H h.

**RGI191** [!] Contribuir en la estrategia de funcionamiento del equipo priorizando los objetivos comunes, fomentando y valorando la participación de todas las personas y responsabilizándose de las tareas individuales, así como del cumplimiento de plazos

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LEARNING ACTIVITIES			СН	NCH	ТН
Carrying out/resolving projects/challenges/cases, etc. to p interdisciplinary contexts, real and/or simulated, individua	provide sol Ily and/or i	utions to problems in n teams	2 h.	1 h.	3 h.
EVALUATION SYSTEM	w	MAKE-UP MECHANI	SMS		
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	20%		(No mech	anisms)	
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%				
Prototype / Product	30%				
Comments: Continuous assessment.					
CH - Class hours: 2 h. NCH - Non-class hours: 1 h. TH - Total hours: 3 h.					

**RGI193** [!] Redacta una memoria de proyecto clara y concisa utilizando las fuentes de información y estructura de memoria facilitadas, y haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje

LEARNING ACTIVITIES			СН	NCH	тн	
Development and writing of records, reports, presentation projects/work experience/challenges/case studies/experin individually and/or in teams	is, audiovi nental inve	sual material, etc. on estigations carried out	3 h.	1 h.	4 h.	
EVALUATION SYSTEM	W	MAKE-UP MECHANI	SMS			
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	20%		(No 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	50%					
Prototype / Product	30%					
<b>Comments:</b> Continuous assessment. It may be asked to document.	redo the					
CH - Class hours: 3 h. NCH - Non-class hours: 1 h. TH - Total hours: 4 h.						

RGI194 [!] Realiza una presentación oral y defensa del proyecto clara y concisa, haciendo uso correcto, inclusivo y no discriminatorio del lenguaje

LEARNING ACTIVITIES			СН	NCH	ТН
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.	1 h.	4 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANI	SMS		
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	20%		(No 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	50%				
Prototype / Product	30%				

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Comments: Continuous assessment.

CH - Class hours: 3 h. NCH - Non-class hours: 1 h. TH - Total hours: 4 h.

EARNING ACTIVITIES			СН	NCH	ТН
Personal study and flexible development of concepts ar oster more meaningful learning	nd subjects u	using active dynamics, to	8 h.	4 h.	12 h.
Conducting tests, giving presentations, presenting defended by the section of the	nces, taking	examinations and/or doing	1 h.	,5 h.	1,5 h.
Presentation by the teacher in the classroom, in particip rocedures associated with the subjects	atory classe	s, of concepts and	4 h.	2 h.	6 h.
Carrying out exercises and solving problems individually	y and/or in te	eams	15 h.	8,5 h.	23,5 h.
VALUATION SYSTEM	W	MAKE-UP MECHANISM	IS		
oding/programming tests omments: Minimum grade: 5	10070	coding/programming tes Comments: Students wi retake the exam. Control	ith less that point value	n 5 in the Cont will be 25% ar	rol point mus nd retake 75%
I - Class hours: 28 h. CH - Non-class hours: 15 h.					
H - Class hours: 28 h. CH - Non-class hours: 15 h. I - Total hours: 43 h. GI131 [!] Aplica las herramientas y procesos de pl gitales que den respuesta al problema propuesto	rogramació	n, simulación e implemen	tación pa	ra desarrollar	sistemas
I - Class hours: 28 h. CH - Non-class hours: 15 h. I - Total hours: 43 h. GI131 [!] Aplica las herramientas y procesos de pa gitales que den respuesta al problema propuesto EARNING ACTIVITIES	rogramació	n, simulación e implemen	tación pai CH	ra desarrollar NCH	sistemas TH
I - Class hours: 28 h. CH - Non-class hours: 15 h. I - Total hours: 43 h. GI131 [!] Aplica las herramientas y procesos de pa gitales que den respuesta al problema propuesto EARNING ACTIVITIES Personal study and flexible development of concepts ar poster more meaningful learning	rogramación nd subjects u	n, simulación e implemen using active dynamics, to	tación par CH 8 h.	ra desarrollar NCH 4 h.	sistemas TH 12 h.
<ul> <li>Glass hours: 28 h.</li> <li>H - Non-class hours: 15 h.</li> <li>H - Total hours: 43 h.</li> <li>Gli31 [!] Aplica las herramientas y procesos de pagitales que den respuesta al problema propuesto</li> <li>EARNING ACTIVITIES</li> <li>Personal study and flexible development of concepts ar poster more meaningful learning</li> <li>Conducting tests, giving presentations, presenting defendeckpoints</li> </ul>	rogramación nd subjects u nces, taking	n, simulación e implemen using active dynamics, to examinations and/or doing	tación par <u>CH</u> 8 h. 1 h.	ra desarrollar <u>NCH</u> 4 h. ,5 h.	<i>sistemas</i> <u><i>TH</i></u> 12 h. 1,5 h.
<ul> <li>I - Class hours: 28 h.</li> <li>CH - Non-class hours: 15 h.</li> <li>I - Total hours: 43 h.</li> <li>I - Total hours:</li></ul>	rogramación nd subjects u nces, taking patory classe	n, simulación e implemen using active dynamics, to examinations and/or doing es, of concepts and	tación par <u>CH</u> 8 h. 1 h. 5 h.	<b>ra desarrollar</b> <u>NCH</u> 4 h. ,5 h. 2 h.	<i>sistemas</i> <i>TH</i> 12 h. 1,5 h. 7 h.
<ul> <li>GI131 [!] Aplica las herramientas y procesos de programmenta e propuesto</li> <li>EARNING ACTIVITIES</li> <li>Personal study and flexible development of concepts ar poster more meaningful learning</li> <li>Conducting tests, giving presentations, presenting defendeckpoints</li> <li>Presentation by the teacher in the classroom, in participart procedures associated with the subjects</li> <li>Carrying out exercises and solving problems individually</li> </ul>	rogramació nd subjects u nces, taking patory classe y and/or in te	n, simulación e implemen using active dynamics, to examinations and/or doing es, of concepts and eams	<b><i>CH</i></b> 8 h. 1 h. 5 h. 23 h.	<b>ra desarrollar</b> <b>NCH</b> 4 h. ,5 h. 2 h. 16,5 h.	<b>sistemas</b> <u>TH</u> 12 h. 1,5 h. 7 h. 39,5 h.
<ul> <li>GI131 [!] Aplica las herramientas y procesos de provincio de la problema propuesto</li> <li>EARNING ACTIVITIES</li> <li>Personal study and flexible development of concepts ar poster more meaningful learning</li> <li>Conducting tests, giving presentations, presenting defendeckpoints</li> <li>Peresentation by the teacher in the classroom, in participar procedures associated with the subjects</li> <li>Carrying out exercises and solving problems individually</li> <li>EVALUATION SYSTEM</li> </ul>	rogramación nd subjects u nces, taking patory classe y and/or in te W	n, simulación e implemen using active dynamics, to examinations and/or doing us, of concepts and eams MAKE-UP MECHANISM	<i>tación par</i> <i>CH</i> 8 h. 1 h. 5 h. 23 h. <b>//S</b>	ra desarrollar NCH 4 h. ,5 h. 2 h. 16,5 h.	<i>sistemas</i> <u>TH</u> 12 h. 1,5 h. 7 h. 39,5 h.

**RGI132** [!] Aplica de forma crítica las teorías y procedimientos más relevantes que hayan permitido desarrollar un sistema digital que dé respuesta a un problema interdisciplinar

LEARNING ACTIVITIES	СН	NCH	ТН	
Development and writing of records, reports, presentations, audiovisual material, etc. on	2 h.	1 h.	3 h.	



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Comments: Minimum grade: 5 Project evaluation based or technical rubric CH - Class hours: 22 h. NCH - Non-class hours: 10 h.	۱ <i>۵ /</i> ۳				
Individual written and/or oral tests or individual coding/programming tests	50%				
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	buter exercises, simulation exercises, laboratory cises, term projects, challenges and problems entation and defence of exercises, case studies, buter practical work, simulation practical work, ratory practical work, term projects, end of degree ect, master's thesis, challenges and problems				ntrol point must and retake 75%. ual defense.
Reports on the completion of exercises, case studies,	10%	Individual written and/or	oral tests	or individual	
EVALUATION SYSTEM	w		19	411.	
procedures associated with the subjects	d/or in t		7 b	4 b	11.
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 h.	4 h.	12 h.
Conducting tests, giving presentations, presenting defence checkpoints	s, taking	examinations and/or doing	1 h.		1 h.
Personal study and flexible development of concepts and s foster more meaningful learning	ubjects	using active dynamics, to	3 h.	1 h.	4 h.
projects/work experience/challenges/case studies/experime individually and/or in teams	ental inv	estigations carried out			

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## LEARNING RESOURCES AND BIBLIOGRAPHY

## Learning resources

Bibliography https://labur.eus/biblio-GIG301

Subject notes Moodle Platform Specific Master Software Lab practical training

[GIG301] DIGITAL ELECTRONIC SYSTEMS