

	[GEB301]	PHYSICS I		
	GENERAL IN			
Studies DEGREE IN INDU	JSTRIAL ELECTRONICS	Subject PHYSICS		
ENGINEERING Semester 1	Course 1	Mention / Field of		
Character BASIC TRAINING		specialisation		
Plan 2022	Modality Face-to-face	Language EUSKARA/CA	STELLANO	
Credits 6	Hours/week 5	Total hours 90 class hours	s + 60 non-class	hours = <u>150 tot</u>
_	2030 AGEN	hours DA GOALS		
NORKAND 9 MOUSTRY MODATION ACCOUNT 9 MOUSTRY MODATION	2000 AOEN			
	PROFE	SSORS		
GALFARSORO ANDUAGA, U				
GANDARIAS INCHAUSTI, KE				
Cubia			uladaa	
(No specific previous			vledge owledge required	/)
	LEARNING	· ·		,
ARNING RESULTS			KC SK	AB ECTS
RA03 - To understand and master		laws of mechanics, and their	x	5,4
plication to solve engineering prot RTR1 - To develop interdisciplinary		/ and of gradual complexity, -	x	0,36
coming aware of respect for huma pact of the proposed solutions on				
		is and/or undertake further studies		
th a high degree of autonomy RTR2 - To express information, ide	as and the arguments that suppo	t them in an orderly clear and	x	0,24
herent manner, orally and in writin	g, based on quality information, se	elf-made or obtained from different	~	0,21
urces, using inclusive and non-dis	criminatory language			
	on minatory language			
-			То	otal: 6
: Knowledge or Content / SK: Skills / AB: A			То	otal: 6
: Knowledge or Content / SK: Skills / AB: A NAEE LEARNING RESULTS NA101 - Knowledge and comprehe	abilities	ling of mathematics and other basic		
: Knowledge or Content / SK: Skills / AB: A NAEE LEARNING RESULTS NA101 - Knowledge and comprehe ngineering speciality, at a level tha	bilities nsion: Knowledge and understand t allows them to acquire the other	competencies of the degree.	sciences inherer	nt in them
: Knowledge or Content / SK: Skills / AB: A NAEE LEARNING RESULTS NA101 - Knowledge and comprehe ngineering speciality, at a level tha NA104 - Analysis in engineering: T levant analytical, calculation and e	abilities nsion: Knowledge and understand t allows them to acquire the other he ability to analyse complex prod experimental methods in a suitable	competencies of the degree. ucts, processes and systems in thei way; and correctly interpret the res	sciences inherer r field of study; cl ults of such analy	nt in them hoose and appl yses.
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E: Knowledge or Content / SK: Skills / AB: A NAEE LEARNING RESULTS NA101 - Knowledge and comprehe ngineering speciality, at a level tha NA104 - Analysis in engineering: T levant analytical, calculation and e NA106 - Engineering projects: Abili rocesses and systems of their special nvironmental, economic and indust NA113 - Practical application of en- processes, and their limitations in the	Abilities Abilities Ansion: Knowledge and understand t allows them to acquire the other he ability to analyse complex prod experimental methods in a suitable ty to project, design and develop of ciality, which meet the established trial aspects, as well as selecting a gineering: Knowledge of application e field of their speciality.	competencies of the degree. ucts, processes and systems in their way; and correctly interpret the res complex products (parts, component requirements, including awareness and applying appropriate project me on of materials, equipment and tools	sciences inherer r field of study; c ults of such analy ts, finished produ of the social, hea thods. , engineering tec	nt in them hoose and appl yses. cts, etc.), alth and safety, hnology and
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Knowledge or Content / SK: Skills / AB: A NAEE LEARNING RESULTS NA101 - Knowledge and comprehe ngineering speciality, at a level tha NA104 - Analysis in engineering: T levant analytical, calculation and e NA106 - Engineering projects: Abili rocesses and systems of their spec nvironmental, economic and indus NA113 - Practical application of en rocesses, and their limitations in th NA119 - Communication and Team ngineering and with society in gene NA120 - Communication and Team nd to cooperate with both engineer IRGE190 (1 sem) LEARNING ACTIVITIES Carrying out/resolving projects/ch interdisciplinary contexts, real and EVALUATION SYSTEM	Abilities Insion: Knowledge and understand t allows them to acquire the other he ability to analyse complex prod experimental methods in a suitable ty to project, design and develop of ciality, which meet the established trial aspects, as well as selecting a gineering: Knowledge of application e field of their speciality. work: Ability to effectively commu- eral. work: Ability to operate effectively and people from other discipline SECONDARY LEA allenges/cases, etc. to provide sol //or simulated, individually and/or in	competencies of the degree. ucts, processes and systems in their a way; and correctly interpret the res- complex products (parts, component requirements, including awareness and applying appropriate project me on of materials, equipment and tools nicate information, ideas, problems in domestic and international contents RNING RESULTS CH utions to problems in 2 h. n teams MAKE-UP MECHANISMS	sciences inherer r field of study; cl ults of such analy is, finished produ of the social, hea thods. , engineering tech and solutions in t xts, individually a <u>NCH</u> 1 h.	ht in them hoose and applyses. cts, etc.), alth and safety, hnology and the field of and as a team, TH 3 h.





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

1RGE191 (1 sem)

Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams				1 h.	3 h.
EVALUATION SYSTEM	w	MAKE-UP MECHANISMS			
Observation (technical capacity, attitude and participation)	100%	•	pservation (technical capacity, attitude and participation) mments: Continuous assessment.		

NCH - Non-class hours: 1 h.

TH - Total hours: 3 h.

RGE106 [!] Identifica, calcula y analiza el movimiento de partículas y sólidos, así como los sistemas de fuerza necesarios para producirlos

			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				5,5 h.	14,5 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints			4 h.		4 h.
Presentation by the teacher in the classroom, in participal procedures associated with the subjects	tory class	es, of concepts and	27 h.		27 h.
Carrying out exercises and solving problems individually and/or in teams				20 h.	29 h.
Self-assessment tests in a context of autonomous and continuous learning				7,5 h.	7,5 h.
Carrying out work experience in real environments and writing the corresponding report		5 h.	3 h.	8 h.	
ALUATION SYSTEM W MAKE-UP MECHANISM					
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory	10%	Individual written and/or coding/programming test	oral tests	or individual	
Reports on the completion of exercises, case studies,		Individual written and/or coding/programming tesi Prototype / Product Comments: - Students v	oral tests ts with less th	nan a 5 at the c	
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	10%	Individual written and/or coding/programming test Prototype / Product	oral tests ts with less th ote of the	nan a 5 at the c control point: c	ontrol point 25%

CH - Class hours: 54 h. NCH - Non-class hours: 36 h. TH - Total hours: 90 h.

 RGE105 [!] Modelizar, calcular y examinar el equilibrio estático de los sólidos

 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
 A:5 h.
 2.5 h.
 7 h.

 Conducting tests, giving presentations, presenting defences, taking examinations and/or doing
 2 h.
 2 h.
 2 h.



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



					Superior	
checkpoints			12 h.		12 h.	
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects					12 n.	
Carrying out exercises and solving problems individually and/or in teams			4 h.	10 h.	14 h.	
Self-assessment tests in a context of autonomous and continuous learning				3 h.	3 h.	
Carrying out work experience in real environments and w	riting the c	corresponding report	4,5 h.	2,5 h.	7 h.	
EVALUATION SYSTEM	W	MAKE-UP MECHAN	ISMS			
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	10%	Individual written and/or oral tests or individual coding/programming tests Prototype / Product				
ndividual written and/or oral tests or individual	80%	51	ototype / Product mments: - Students with less than a 5 at the contro			
oding/programming tests	retake the exam Final note of t		al note of the o	control point: c	control point 25%	
Prototype / Product	10%	and retake 75% In th the individual defense.		L there will no	ot be any retake	
Comments: - Control point: minimum grade 5 PBL proj ade: 30% product, 20% technical content of the report ar dividual technical defense.		the individual defense.				
H - Class hours: 27 h. CH - Non-class hours: 18 h. I - Total hours: 45 h.						
RGE192 (1 sem)						
EARNING ACTIVITIES			СН	NCH	тн	
			-			
Carrying out/resolving projects/challenges/cases, etc. to	provide so	utions to problems in	2 h.	1 h.	3 h.	
			2 h.	1 h.	3 h.	
Carrying out/resolving projects/challenges/cases, etc. to nterdisciplinary contexts, real and/or simulated, individua EVALUATION SYSTEM				1 h.	3 h.	
nterdisciplinary contexts, real and/or simulated, individua	ally and/or W	in teams	ISMS al capacity, at	itude and par		
nterdisciplinary contexts, real and/or simulated, individua	ally and/or W	m teams MAKE-UP MECHAN Observation (technica	ISMS al capacity, at	itude and par		
nterdisciplinary contexts, real and/or simulated, individua EVALUATION SYSTEM Observation (technical capacity, attitude and participation H - Class hours: 2 h. CH - Non-class hours: 1 h.	ally and/or W	m teams MAKE-UP MECHAN Observation (technica	ISMS al capacity, at	itude and par		
nterdisciplinary contexts, real and/or simulated, individua EVALUATION SYSTEM Diservation (technical capacity, attitude and participation H - Class hours: 2 h. CH - Non-class hours: 1 h. H - Total hours: 3 h. RGE193 (1 sem)	ally and/or W	m teams MAKE-UP MECHAN Observation (technica	ISMS al capacity, at bus assessme	iitude and par nt.	ticipation)	
Anterdisciplinary contexts, real and/or simulated, individual EVALUATION SYSTEM Deservation (technical capacity, attitude and participation 1 - Class hours: 2 h. CH - Non-class hours: 1 h. 1 - Total hours: 3 h. RGE193 (1 sem) EARNING ACTIVITIES	ally and/or <u> </u> <u> </u>	MAKE-UP MECHAN Observation (technica Comments: Continue	ISMS al capacity, at bus assessme	iitude and par nt.	ticipation)	
nterdisciplinary contexts, real and/or simulated, individua EVALUATION SYSTEM Dbservation (technical capacity, attitude and participation H - Class hours: 2 h. CH - Non-class hours: 1 h. H - Total hours: 3 h.	ally and/or <u>w</u> n) 100%	MAKE-UP MECHAN Observation (technica Comments: Continue sual material, etc. on	ISMS al capacity, at bus assessme	iitude and par nt.	ticipation)	
nterdisciplinary contexts, real and/or simulated, individual EVALUATION SYSTEM Deservation (technical capacity, attitude and participation H - Class hours: 2 h. CH - Non-class hours: 1 h. 1 - Total hours: 3 h. RGE193 (1 sem) EARNING ACTIVITIES Development and writing of records, reports, presentation projects/work experience/challenges/case studies/experiendividually and/or in teams	ally and/or <u>w</u> n) 100%	MAKE-UP MECHAN Observation (technica Comments: Continue sual material, etc. on	ISMS al capacity, at bus assessme us assessme <u>CH</u> 1,5 h.	iitude and par nt.	ticipation)	
A - Class hours: 2 h. CH - Non-class hours: 1 h. I - Total hours: 3 h. RGE193 (1 sem) EARNING ACTIVITIES Development and writing of records, reports, presentation orojects/work experience/challenges/case studies/experiendividually and/or in teams EVALUATION SYSTEM Reports on the completion of exercises, case studies,	ns, audiovi mental inve	MAKE-UP MECHAN Observation (technica Comments: Continue sual material, etc. on estigations carried out MAKE-UP MECHAN Reports on the comp	ISMS al capacity, at bus assessme CH 1,5 h. ISMS letion of exerc	iitude and par nt. NCH 1,5 h. iises, case stu	ticipation) TH 3 h.	
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1RGE194 (1 sem)



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Course: 2024 / 2025 - Course planning



LEARNING ACTIVITIES				NCH	ТН
Development and writing of records, reports, presentation projects/work experience/challenges/case studies/experin individually and/or in teams			1,5 h.	1,5 h.	3 h.
EVALUATION SYSTEM	W MAKE-UP 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	100%	Presentation and defence of exercises, case studies, compute practical work, simulation practical work, laboratory practical v term projects, end of degree project, master's thesis, challeng and problems Comments: Continuous assessment.			
CH - Class hours: 1,5 h. NCH - Non-class hours: 1,5 h. TH - Total hours: 3 h.					

CONTENTS

1. STATICS

1.1. Forces and moments

Forces and components

Moments. Moment of a couple

1.2 Newton's laws

Equilibrium of a particle

Equilibrium of a rigid body

1.3. Free body diagrams in 2D and 3D

Isolating a mechanical system

Constraints

Contact forces: normal and friction

1.4. Centroid. Center of mass. Center of gravity. Distributed forces

2. KINEMATICS

2.1. Motion in one dimension of a particle

Position, speed and acceleration

2.2. Motion in two dimensions of a particle

Tangential and normal components

2.3. Case studies: parabolic motion and circular motion

2.4. Motion of connected particles

3. KINETICS

- 3.1. Kinetics of particles. Newton's 2nd law
- 3.2. Kinetics of rigid solids. Newton's 2nd law
- 3.3. Kinetics of particles. Energy methods
- 3.4. Kinetics of rigid solids. Energy methods





LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

Moodle Platform Class presentations Slides of the subject Subject notes Bibliography https://katalogoa.mondragon.edu/janium-bin/sumario.pl?ld=2023091 8125413