[GFC001] GENERAL PHYSICS I

GENERAL INFORMATION

Studies	ENGINEERING PHYSICS APPLIED TO INDUSTRY			**Subject**	Physics
Semester	1	**Course**	1	**Mention / Field of specialisation**	
Character	BASIC TRAINING				
Plan	2022	**Modality**	Face-to-face	**Language**	EUSKARA/CASTELLANO
Credits	6	**Hours/week**	0	**Total hours**	90.06 class hours + 59.94 non-class hours = **150 total hours**

PROFESSORS

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REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
(No specific previous subjects required)	*(No previous knowledge required)*

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GFR003 - Understanding and mastering the basic concepts of the general laws of mechanics and their application to solve problems in the engineering field	x	x		5,4
G-RTR1 - To develop interdisciplinary projects specific to their specialty and of gradual complexity, becoming aware of respect for human rights and fundamental rights, and analyzing and assessing the impact of the proposed solutions on the SDGs - to acquire and/or apply basic, advanced and /or avant-garde, demonstrating the ability to work in multidisciplinary teams and/or undertake further studies with a high degree of autonomy		x		0,28
G-RTR2 - To express information, ideas and the arguments that support them in an orderly, clear and coherent manner, orally and in writing, based on quality information, self-made or obtained from different sources, using inclusive and non-discriminatory language		x		0,32
			Total:	6

KC: Knowledge or Content / SK: Skills / AB: Abilities

SECONDARY LEARNING RESULTS

RGF190 **[!]** ***Conocer y aplicar las fases para desarrollar de forma guiada, con los objetivos y la planificación previamente definidos, un proyecto de complejidad técnica acorde con los conocimientos de formación básica de la ingeniería. Reflexiona sobre los con***

LEARNING ACTIVITIES	CH	NCH	TH
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	3 h.	1 h.	4 h.

EVALUATION SYSTEM	W
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%

MAKE-UP MECHANISMS

(No mechanisms)

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

RGF191 **[!]** ***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.***

LEARNING ACTIVITIES	CH	NCH	TH
Carrying out/resolving projects/challenges/cases, etc. to provide solutions to problems in interdisciplinary contexts, real and/or simulated, individually and/or in teams	2 h.	1 h.	3 h.

EVALUATION SYSTEM	W

MAKE-UP MECHANISMS

Self-assessment	25%	*(No mechanisms)*
Co-assessment	25%	
Observation (technical capacity, attitude and participation)	50%	

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

RGF193 **[!]** ***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	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	2 h.	2 h.	4 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%	*(No mechanisms)*

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

RGF194 **[!]** ***Realiza una presentación oral y defensa del proyecto clara y concisa, haciendo uso correcto, inclusivo y no discriminatorio del lenguaje.***

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	2 h.	2 h.	4 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%	*(No mechanisms)*

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

RGF106 **[!]** ***Modeliza, calcula y analiza el equilibrio estático de los sólido***

LEARNING ACTIVITIES	CH	NCH	TH
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	4,62 h.	3,08 h.	7,7 h.
Practical work in workshops and/or laboratories, individually and/or in teams	1 h.	,65 h.	1,65 h.
Self-assessment tests in a context of autonomous and continuous learning	1 h.	,65 h.	1,65 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Presentation and defence of exercises, case studies, computer practical work, simulation practical work,	30%	Individual written and/or oral tests or individual coding/programming tests

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	70%

CH - Class hours: 6,62 h.
NCH - Non-class hours: 4,38 h.
TH - Total hours: 11 h.

RGF107 **[!]** ***Describe, calcula y analiza el movimiento plano de partículas y sólidos***

LEARNING ACTIVITIES	CH	NCH	TH
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	18,9 h.	12,6 h.	31,5 h.
Practical work in workshops and/or laboratories, individually and/or in teams	4,05 h.	2,7 h.	6,75 h.
Self-assessment tests in a context of autonomous and continuous learning	4,05 h.	2,7 h.	6,75 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	30%	Individual written and/or oral tests or individual coding/programming tests
Individual written and/or oral tests or individual coding/programming tests	70%	

CH - Class hours: 27 h.
NCH - Non-class hours: 18 h.
TH - Total hours: 45 h.

RGF108 **[!]** ***Analiza sistemas de fuerzas fuera del equilibrio y calcula y discute su efecto sobre el movimiento de partículas y sólidos***

LEARNING ACTIVITIES	CH	NCH	TH
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	23,9 h.	16 h.	39,9 h.
Practical work in workshops and/or laboratories, individually and/or in teams	5,15 h.	3,4 h.	8,55 h.
Self-assessment tests in a context of autonomous and continuous learning	5,15 h.	3,4 h.	8,55 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	30%	Individual written and/or oral tests or individual coding/programming tests
Individual written and/or oral tests or individual coding/programming tests	70%	

CH - Class hours: 34,2 h.
NCH - Non-class hours: 22,8 h.
TH - Total hours: 57 h.

RGF109 **[!]** ***Identifica, calcula y analiza fenómenos oscilatorios y ondulatorios***

LEARNING ACTIVITIES	CH	NCH	TH
Personal study and flexible development of concepts and subjects using active dynamics, to	4,62 h.	3,08 h.	7,7 h.

foster more meaningful learning			
Practical work in workshops and/or laboratories, individually and/or in teams	1 h.	,65 h.	1,65 h.
Self-assessment tests in a context of autonomous and continuous learning	1 h.	,65 h.	1,65 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	30%	Individual written and/or oral tests or individual coding/programming tests
Individual written and/or oral tests or individual coding/programming tests	70%	

CH - Class hours: 6,62 h.
NCH - Non-class hours: 4,38 h.
TH - Total hours: 11 h.

RGF110 **[!]** ***Analiza y resuelve problemas y ejercicios de campos gravitatorios***

LEARNING ACTIVITIES	CH	NCH	TH
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning	4,62 h.	3,08 h.	7,7 h.
Practical work in workshops and/or laboratories, individually and/or in teams	1 h.	,65 h.	1,65 h.
Self-assessment tests in a context of autonomous and continuous learning	1 h.	,65 h.	1,65 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	30%	Individual written and/or oral tests or individual coding/programming tests
Individual written and/or oral tests or individual coding/programming tests	70%	

CH - Class hours: 6,62 h.
NCH - Non-class hours: 4,38 h.
TH - Total hours: 11 h.

CONTENTS

1. STATICS

1.1. Force and momentum.

1.2. Fundamentals of equilibrium. Newton's laws.

1.3. Free solid diagrams.

1.4. Center of gravity. Distributed forces.

1.5. Contact forces: normal force and friction.

2. KINEMATICS

2.1. Particles in rectilinear motion.

2.2. Plane motion of the particle: tangential and normal components.

2.3. Practical cases: parabolic movement and circular movement.

2.4. Composition of movement.

3. KINETICS / DYNAMICS

3.1. Second law of Newton. Particle kinetics.

3.2. Kinetics of the rigid solid in 2D. Moments of inertia.

3.3. Energy methods: work and kinetic and potential energy.

4. OSCILLATIONS AND WAVES

4.1. Simple harmonic motion. Oscillations.

4.2. Wave motion. Wave properties.

4.3. Wave phenomena.

5. GRAVITATIONAL FIELD

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes	https://labur.eus/hGDCR
Labs	
Moodle Platform	
Class presentations	