

Goi Eskola Politeknikoa Escuela Politécnica

[GBB201] PHYSICS I         GENERAL INFORMATION         Studies       DEGREE IN BIOMEDICAL ENGINEERING       Subject PHYSICS         Semester       1       Course       1         Mention / Field of Specialisation       Subject PHYSICS         Plan       2022       Modality       Face-to-face       Language       EUSKARA         Credits       6       Hours/week       5.06       Total hours       91 class hours + 59 non-hours         2030 AGENDA GOALS         PROFESSORS         ASEGUINOLAZA AGUIRRECHE, UNAI         IEACUINED PREVIOUS KNOWLEDGE         Knowledge         (No specific previous subjects required)         (No specific previous subjects specific to their specialty and of gradual complexity, -         SAD3 - To understand and master the basic concepts of the general laws of mechanics, and their piplication to solve engineering problems       KC       S         Straft - To develop interdisciplinary projects specific to their specialty and of gradual complexity, -       A         Strephoto the proposed solutions on the SDCs -	class hours = <u>150 te</u> quired) <del>K AB ECTS</del> <del>x</del> 5,4 x 0,36
GENERAL INFORMATION         Studies       DEGREE IN BIOMEDICAL ENGINEERING       Subject       PHYSICS         Semester       1       Course       1       Mention / Field of specialisation         Plan       2022       Modality       Face-to-face       Language       EUSKARA         Credits       6       Hours/week       5.06       Total hours       91 class hours + 59 non-hours         2030 AGENDA GOALS         PROFESSORS         AGEUINOLAZA AGUIRRECHE, UNAI         REQUIRED PREVIOUS KNOWLEDGE         Knowledge         (No specific previous subjects required)         (No specific previous subjects required)         (No specific previous subjects required)         KEANING RESULTS         KC       S         SHARIS - To understand and master the basic concepts of the general laws of mechanics, and their       2         pication to solve engineering problems         SHARIS - To understand and master the basic concepts of the general laws of mechanics, and their         pication to solve engineering problems         SHARIS - To understand and master the basic concepts of the general laws of mechanics, and their <td< th=""><th>class hours = <u>150 tr</u> <u>quired</u>) <u>K AB ECT</u> <u>c 5,4</u> <u>c 0,36</u></th></td<>	class hours = <u>150 tr</u> <u>quired</u> ) <u>K AB ECT</u> <u>c 5,4</u> <u>c 0,36</u>
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Credits       6       Hours/week       5.06       Total hours       91 class hours + 59 non-hours         2030 AGENDA GOALS         PROFESSORS         ASEGUINOLAZA AGUIRRECHE, UNAI         REQUIRED PREVIOUS KNOWLEDGE         Knowledge         (No specific previous subjects required)         (No previous knowledge re         LEARNING RESULTS         KC s         -RTR1 - To develop interdisciplinary projects specific to their specialty and of gradual complexity, -         oplication to solve engineering problems         -RTR1 - To develop interdisciplinary projects specific to their specialty and of gradual complexity, -         - add/or apply basic, advanced and/or vant-garde, demonstrating the ability to work in multidisciplinary teams and/or undertake further studies ith a high degree of autonomy	class hours = <u>150 t</u> quired) <del>x AB ECTS</del> x 5,4 x 0,36
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EARNING RESULTS       KC       S         RA03 - To understand and master the basic concepts of the general laws of mechanics, and their plication to solve engineering problems       S         RTR1 - To develop interdisciplinary projects specific to their specialty and of gradual complexity, - coming aware of respect for human rights and fundamental rights, and analyzing and assessing the pact of the proposed solutions on the SDGs - to acquire and/or apply basic, advanced and/or ant-garde, demonstrating the ability to work in multidisciplinary teams and/or undertake further studies th a high degree of autonomy       RTR2 - To express information, ideas and the arguments that support them in an orderly, clear and herent manner, orally and in writing, based on quality information, self-made or obtained from different urces. Using inclusive and non-discriminatory language       A	K         AB         ECT:           x         5,4           x         0,36
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aroos, doing instante and non-aboritininatory language	<b>x</b> 0,24
	Total: 6
C: Knowledge or Content / SK: Skills / AB: Abilities	
1RGB190 (1 sem)	
LEARNING ACTIVITIES CH NCH	1 TH
projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams	511.
EVALUATION SYSTEM W MAKE-UP MECHANISMS	
Observation (technical capacity, attitude and participation)       100%       Reports on the completion of exercises, case exercises, simulation exercises, laboratory of projects, challenges and problems         Observation (technical capacity, attitude and participation)       100%       Reports on the completion of exercises, case exercises, simulation exercises, laboratory of projects, challenges and problems	se studies, compute exercises, term d participation)
H - Class hours: 2 h. CH - Non-class hours: 1 h. H - Total hours: 3 h.	
<ul> <li>H - Class hours: 2 h.</li> <li>ICH - Non-class hours: 1 h.</li> <li>H - Total hours: 3 h.</li> <li>RGB106 [!] Identifica, calcula y analiza el movimiento de partículas y sólidos, así como los sistemas de furroducirlos</li> </ul>	erza necesarios pa
CH - Class hours: 2 h. NCH - Non-class hours: 1 h. I'H - Total hours: 3 h. RGB106 [!] Identifica, calcula y analiza el movimiento de partículas y sólidos, así como los sistemas de fu producirlos	erza necesarios pa



Course: 2024 / 2025 - Course planning

individually and/or in teams 4 h. Conducting tests, giving presentations, presenting defences, taking examinations and/or doing 4 h. checkpoints 30 h. 30 h. Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects 10 h. 22 h. 32 h. Carrying out exercises and solving problems individually and/or in teams 8 h. 8 h. Self-assessment tests in a context of autonomous and continuous learning **EVALUATION SYSTEM** w MAKE-UP MECHANISMS Reports on the completion of exercises, case studies, 20% Individual written and/or oral tests or individual computer exercises, simulation exercises, laboratory coding/programming tests exercises, term projects, challenges and problems 80% Individual written and/or oral tests or individual coding/programming tests CH - Class hours: 54 h. NCH - Non-class hours: 36 h. TH - Total hours: 90 h.

LEARNING ACTIVITIES				NCH	ТН
Development and writing of records, reports, presentation projects/work experience/challenges/case studies/experir individually and/or in teams	is, audiovis nental inve	sual material, etc. on estigations carried out	2 h.	1 h.	3 h.
EVALUATION SYSTEM	W	MAKE-UP MECHANI	SMS		
EVALUATION SYSTEM Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	100%	MAKE-UP MECHANI Reports on the complexercises, simulation projects, challenges a	<b>SMS</b> etion of exerci exercises, la nd problems	cises, case stu boratory exerc	idies, compu ises, term

NCH - Non-class hours: 1 h.

TH - Total hours: 3 h.

RGB105 [!] Modelizar, calcular y examinar el equilibrio estático de los sólidos

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.	8 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints					2 h.
Presentation by the teacher in the classroom, in participa procedures associated with the subjects	15 h.		15 h.		
Carrying out exercises and solving problems individually and/or in teams				11 h.	16 h.
Self-assessment tests in a context of autonomous and continuous learning				4 h.	4 h.
VALUATION SYSTEM W MAKE-UP MECHANIS			IS		
Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems	20%	Individual written and/or oral tests or individual coding/programming tests			
coding/programming tests	00 //				
CH - Class hours: 27 h. NCH - Non-class hours: 18 h.					



TH - Total hours: 45 h.

1RGB192 (1 sem)					
			CH	NCH	ти
Carrying out/resolving projects/challenges/cases_etc_to_pr	ovide solu	tions to problems in	2 h.	1 h.	3 h.
interdisciplinary contexts, real and/or simulated, individually	y and/or in	i teams			0.11
EVALUATION SYSTEM	w		SWS		
Reports on the completion of exercises, case studies	100%	MARE-OF MECHANIS	(No mech	anisms)	
computer exercises, simulation exercises, laboratory			(110 1110011		
exercises, term projects, challenges and problems					
CH - Class hours: 2 h.					
NCH - Non-class hours: 1 h.					
TH - Total hours: 3 h.					
1RGB191 (1 sem)					
LEARNING ACTIVITIES			СН	NCH	TH
Development and writing of records, reports, presentations	, audiovisi	ual material, etc. on	2 h.	1 h.	3 h.
individually and/or in teams	ental inves	stigations carried out			
EVALUATION SYSTEM	<u></u>	MAKE-UP MECHANI	SMS	· .	r
Self-assessment	33%	Reports on the comple	etion of exer	cises, case stu	dies, computer
Co-assessment	34%	projects, challenges a	nd problems		303, term
Observation (technical capacity, attitude and participation)	3376	Observation (technical	capacity, at	titude and part	icipation)
CH - Class nours: 2 h. NCH - Non-class hours: 1 h					
TH - Total hours: 3 h.					
1RGB194 (1 sem)					
LEARNING ACTIVITIES			СН	NCH	тн
Development and writing of records, reports, presentations	, audiovis	ual material, etc. on	2 h.	1 h.	3 h.
projects/work experience/challenges/case studies/experime	ental invest	stigations carried out			
individually and/or in teams					
EVALUATION SYSTEM	W	MAKE-UP MECHANI	SMS		
				titudo ond nor	icination)
Presentation and defence of exercises, case studies,	100%	Observation (technical	capacity, at	liluue anu pan	icipation)
Presentation and defence of exercises, case studies, computer practical work, simulation practical work,	100%	Observation (technical	capacity, at	lilluue anu pan	ισματισπ)
Presentation and defence of exercises, case studies, computer practical work, simulation practical work, laboratory practical work, term projects, end of degree	100%	Observation (technica	capacity, at	and pan	
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%	Observation (technica	capacity, at	litude and par	
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%	Observation (technica	capacity, at	unuue anu pan	icipation)
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 CH - Class hours: 2 h.	100%	Observation (technica	capacity, at	and pan	μαιση
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 CH - Class hours: 2 h. NCH - Non-class hours: 1 h.	100%	Observation (technica	capacity, at	inuue anu pan	μαματιση

CONTENTS



Course: 2024 / 2025 - Course planning

1. STATICS1.1 Forces and moments Forces and components Moments and torques1.2 Newton's laws Equilibriu m of particles Equilibrium of solids1.3 Free solid diagrams in 2D and 3D Isolation of a mechanical syst em Joints Contact forces: normal and friction1.4. Centroid. Center of masses. Center of gravity. Distri buted forces2. KINEMATICS2.1. Rectilinear motion of the particle. Position, velocity and acceleration2.2 . General motion of the particle Tangential and normal components2.3. Practical cases: parabolic motion and circular motion2.4. Linked motion3. KINETICS3.1. Kinetics of particles. Newton's 2nd law3.2. Rigid so lid kinetics. Newton's 2nd law3.3. Particle kinetics. Energy methods3.4. Rigid solid kinetics. Energetic methods Translated with DeepL.com (free version)

## LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
[!] Plataforma Moodle	https://katalogoa.mondragon.edu/janium-bin/sumario.pl?Id=2023091
[!] Transparencias de la asignatura	8125229
[!] Apuntes de la asignatura	

[!] Presentaciones en clase