[GBJ202] BIOMATERIALS II

GENERAL INFORMATION

Studies	DEGREE IN BIOMEDICAL ENGINEERING			**Subject**	BIOMATERIALS
Semester	2	**Course**	2	**Mention / Field of specialisation**	
Character	COMPULSORY				
Plan	2022	**Modality**	Face-to-face	**Language**	EUSKARA
Credits	3	**Hours/week**	2.65	**Total hours**	47.75 class hours + 27.25 non-class hours = **75 total hours**

PROFESSORS

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REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
BIOMATERIALS I	*(No previous knowledge required)*

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GBR203 - To apply knowledge of biomaterials to the design and development of implants and biomedical instruments		x		2,6
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		0,16
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		0,24
			Total:	3

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

SECONDARY LEARNING RESULTS

RGB290 **[!]** ***Proponer los objetivos y la planificación de un proyecto que le permita adquirir y/o reforzar los conocimientos de tecnologías propias de su especialidad,- que en ocasiones llegan a la vanguardia del conocimiento- y definir una estrategía de aprendiz***

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	1,25 h.	,75 h.	2 h.

EVALUATION SYSTEM	W
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%

MAKE-UP MECHANISMS

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

Observation (technical capacity, attitude and participation)

CH - Class hours: 1,25 h.
NCH - Non-class hours: ,75 h.
TH - Total hours: 2 h.

RGB291 **[!]** ***Establecer las responsabilidades de los miembros del equipo utilizando técnicas adecuadas para fomentar la eficiencia del equipo para el desarrollo del proyecto en los plazos establecidos (compartir recursos, aportar ideas, habilidades comunicativas***

LEARNING ACTIVITIES	CH	NCH	TH
Development and writing of records, reports, presentations, audiovisual material, etc. on	1,25 h.	,75 h.	2 h.

projects/work experience/challenges/case studies/experimental investigations carried out individually and/or in teams

EVALUATION SYSTEM	W
Self-assessment	25%
Co-assessment	25%
Observation (technical capacity, attitude and participation)	50%

MAKE-UP MECHANISMS

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

Observation (technical capacity, attitude and participation)

CH - Class hours: 1,25 h.
NCH - Non-class hours: ,75 h.
TH - Total hours: 2 h.

RGB293 **[!]** ***Redacta y estructura correctamente la memoria del proyecto, haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje. Para ello, busca y hace uso de las fuentes de información adecuadas.***

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.	1 h.	3 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

Reports on the completion of exercises, case studies, computer exercises, simulation exercises, laboratory exercises, term projects, challenges and problems

Observation (technical capacity, attitude and participation)

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

RGB294 **[!]** ***Realiza una presentación oral del proyecto con argumentos elaborados por sí mismos 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.	1 h.	3 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

Observation (technical capacity, attitude and participation)

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

RGB205 **[!]** ***Conoce y comprende las interacciones entre la superficie del biomaterial y su entorno***

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	5 h.	3 h.	8 h.
Personal study and flexible development of concepts and subjects using active dynamics, to	3 h.	1 h.	4 h.

foster more meaningful learning			
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	14 h.	9 h.	23 h.
Self-assessment tests in a context of autonomous and continuous learning	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	20%
Individual written and/or oral tests or individual coding/programming tests	80%

Comments: Exams: 60 % control point + 10 % moodle tests during lesson period. Exercises: 10 % case study + 20% PBL

MAKE-UP MECHANISMS

Individual written and/or oral tests or individual coding/programming tests

Comments: %25 1st CP + %75 2nd CP

CH - Class hours: 25 h.
NCH - Non-class hours: 14 h.
TH - Total hours: 39 h.

RGB206 [!] ***Conoce y comprende las técnicas de modificación superficial y las metodologías para la caracterización de las biosuperficies***

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	4 h.	3 h.	7 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	1 h.		1 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	10 h.	6 h.	16 h.
Carrying out work experience in real environments and writing the corresponding report	1,25 h.	,75 h.	2 h.

EVALUATION SYSTEM	W
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	20%
Individual written and/or oral tests or individual coding/programming tests	80%

Comments: Lesson exercises: 10% practicum + 10% case study + 20% PBL

MAKE-UP MECHANISMS

Individual written and/or oral tests or individual coding/programming tests

Comments: %25 1st CP + %75 2nd CP

CH - Class hours: 16,25 h.
NCH - Non-class hours: 9,75 h.
TH - Total hours: 26 h.

CONTENTS

1. Basic concepts of materials for biological applications2. Biomaterial types: metals, polymers and ceramics3. Tissue engineering4. Corrosion in biological media5. Friction and wear6. Surface modification and characterization

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Technical articles	https://labur.eus/OQUG4
Topic related web quires	
Moodle Platform	
Class presentations	
Lab practical training	
Slides of the subject	