

[GBE201] BIOLOGY

GENERAL INFORMATION

Studies	DEGREE IN BIOMEDICAL ENGINEERING		Subject	HEALTH SCIENCES
Semester	2	Course	1	Mention / Field of specialisation
Character	BASIC TRAINING		Language	EUSKARA
Plan	2022	Modality	Face-to-face	Total hours
Credits	6	Hours/week	5.39	97 class hours + 53 non-class hours = 150 total hours

PROFESSORS

AGINAGALDE UNANUE, MAIALEN

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GBR101 - To apply the principles of Biology to problems in the field of Biomedical Engineering	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

RGB190 [!] *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 cono*

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	2,5 h.	1,5 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

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: 2,5 h.

NCH - Non-class hours: 1,5 h.

TH - Total hours: 4 h.

RGB191 [!] *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
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

MAKE-UP MECHANISMS

Self-assessment	25%	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)
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.

RGB193 [!] *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	2,5 h.	1,5 h.	4 h.

EVALUATION SYSTEM

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

W

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: 2,5 h.
NCH - Non-class hours: 1,5 h.
TH - Total hours: 4 h.

RGB194 [!] *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	2,5 h.	1,5 h.	4 h.

EVALUATION SYSTEM

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

W

100%

MAKE-UP MECHANISMS

Observation (technical capacity, attitude and participation)

CH - Class hours: 2,5 h.
NCH - Non-class hours: 1,5 h.
TH - Total hours: 4 h.

RGB123 [!] *Identificar los componentes químicos de los seres vivos y conocer el papel que desarrollan en las principales rutas metabólicas*

LEARNING ACTIVITIES

	CH	NCH	TH
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning		12,5 h.	12,5 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.		2 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	18 h.		18 h.

Carrying out exercises and solving problems individually and/or in teams 5 h. 3 h. 8 h.

EVALUATION SYSTEM

W

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

100%

MAKE-UP MECHANISMS

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

CH - Class hours: 25 h.

NCH - Non-class hours: 15,5 h.

TH - Total hours: 40,5 h.

RGB124 [!] *Conocer la estructura y función de los orgánulos celulares, y diferenciar diferentes tipos de células*

LEARNING ACTIVITIES

CH

NCH

TH

Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning 10 h. 10 h.

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

Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects 19 h. 19 h.

Carrying out exercises and solving problems individually and/or in teams 6,5 h. 3 h. 9,5 h.

Practical work in workshops and/or laboratories, individually and/or in teams 1,5 h. 1,5 h. 3 h.

EVALUATION SYSTEM

W

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

80%

Observation (technical capacity, attitude and participation) 20%

MAKE-UP MECHANISMS

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

CH - Class hours: 29 h.

NCH - Non-class hours: 14,5 h.

TH - Total hours: 43,5 h.

RGB125 [!] *Conocer las bases de la microbiología*

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 10 h. 5,5 h. 15,5 h.

Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning 3 h. 3 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 10,5 h. 10,5 h.

Carrying out exercises and solving problems individually and/or in teams 1 h. 2 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

50%

Individual written and/or oral tests or individual coding/programming tests 50%

MAKE-UP MECHANISMS

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

CH - Class hours: 22,5 h.

NCH - Non-class hours: 10,5 h.

TH - Total hours: 33 h.

RGB126 [!] *Conocer los mecanismos de defensa inmunitaria y de rechazo*

LEARNING ACTIVITIES

	<i>CH</i>	<i>NCH</i>	<i>TH</i>
Personal study and flexible development of concepts and subjects using active dynamics, to foster more meaningful learning		7 h.	7 h.
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2 h.		2 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	7 h.		7 h.
Seminars, debates and/or workshops to deepen and/or share experiences.	2 h.		2 h.

EVALUATION SYSTEM

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

W

100%

MAKE-UP MECHANISMS

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

CH - Class hours: 11 h.

NCH - Non-class hours: 7 h.

TH - Total hours: 18 h.

CONTENTS

- 1.- Organic chemistry
- 2.- Amino acids
- 3.- Proteins
- 4.- Myoglobin and hemoglobin. enzymes
- 5.- Carbohydrates
- 7.- DNA and RNA. structure and function
- 8.- Cell structure. plasma membrane
- 9.- Structures and organelles of the cytoplasm
- 10.- Nuclear membrane
- 11.-Tissues
- 12.- Microbiology
- 13.- Bacterial growth and genetics

14.- Viruses, viroids and prions. Generalities

15.- Reproduction of viruses

16.- Immune system

17.- Adaptive immune response

18.- Diseases and treatments of immunological origin

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

Presentations by external Lecturers
Moodle Platform
Class presentations
Video projections
Lab practical training
Slides of the subject

Bibliography

"Histología básica". Leslie P.Gartner, James L.Hiatt. Elsevier Saunders 2011
"Atlas de histología descriptiva" Ross_Pawlina_Barnash. Editorial medica panamericana
"Lehninger Principios de bioquímica" David L. Nelson, Michael M. Cox. OMEGA Sexta edición
Alfonso Calvo. Biología celular Biomédica
Patton, Thibadeau. Anatomía y Fisiología
Willey, Sherwood, Woolverton. Microbiología de Prescott, Harley y Klein (7.edizioa),