[GBL202] MEDICAL TECHNOLOGICAL EQUIPMENT

GENERAL INFORMATION

Studies	DEGREE IN BIOMEDICAL ENGINEERING			**Subject**	?
Semester	1	**Course**	3	**Mention / Field of specialisation**	
Character	COMPULSORY				
Plan	2022	**Modality**	Face-to-face	**Language**	ENGLISH
Credits	4,5	**Hours/week**	3.91	**Total hours**	70.35 class hours + 42.15 non-class hours = **112.5 total hours**

PROFESSORS

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TERMENON CONDE, MAITE

REQUIRED PREVIOUS KNOWLEDGE

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

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
GBR301 - To analyze the operation and specific characteristics of different medical equipment for diagnosis and treatment			*x*	3,78
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*		0,4
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:	4,5

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

SECONDARY LEARNING RESULTS

RGB390 **[!]** ***Definir y gestionar los objetivos y la planificación de un proyecto que le permita adquirir y/o reforzar los conocimientos de tecnologías específicas de su especialidad,- que en ocasiones llegan a la vanguardia del conocimiento- y definir una estrate***

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	2,5 h.	1,5 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%	Observation (technical capacity, attitude and participation)

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

RGB391 **[!]** ***Coordinar el equipo de trabajo, estimulando la cohesión y buen clima para lograr la integración de todas las personas y su contribución para alcanzar un rendimiento apropiado, tanto a nivel individual como grupal, para el desarrollo del proyecto en***

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	1,9 h.	1,1 h.	3 h.

EVALUATION SYSTEM	W	MAKE-UP MECHANISMS
Self-assessment	25%	Observation (technical capacity, attitude and participation)

Co-assessment	25%
Observation (technical capacity, attitude and participation)	50%

CH - Class hours: 1,9 h.
NCH - Non-class hours: 1,1 h.
TH - Total hours: 3 h.

RGB392 **[!]** ***Identificar y argumentar de forma precisa los ODS en los que incide el proyecto realizado, aportando posibles acciones para la mejora.***

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	1,9 h.	1,1 h.	3 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: 1,9 h.
NCH - Non-class hours: 1,1 h.
TH - Total hours: 3 h.

RGB393 **[!]** ***Elabora la memoria del proyecto, aportando argumentos elaborados y haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje.***

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	2,5 h.	1,5 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%	Observation (technical capacity, attitude and participation)

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

RGB394 **[!]** ***Realiza una presentación oral del proyecto, justificando las soluciones propuestas con argumentos elaborados y precisos, y haciendo un uso correcto, inclusivo y no discriminatorio del lenguaje.***

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	2,5 h.	1,5 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%	Observation (technical capacity, attitude and participation)

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

TH - Total hours: 4 h.

RGB301 **[!]** ***Conoce el equipamiento tecnológico utilizado en diagnóstico médico, cirugía, tratamientos médicos, soporte vital y rehabilitación, así como sus características y funcionalidades***

LEARNING ACTIVITIES	CH	NCH	TH
Conducting tests, giving presentations, presenting defences, taking examinations and/or doing checkpoints	2,5 h.	1,5 h.	4 h.
Presentation by the teacher in the classroom, in participatory classes, of concepts and procedures associated with the subjects	29,7 h.	17,8 h.	47,5 h.
Practical work in workshops and/or laboratories, individually and/or in teams	8,1 h.	4,9 h.	13 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	20%	Individual written and/or oral tests or individual coding/programming tests
Individual written and/or oral tests or individual coding/programming tests	80%	

CH - Class hours: 40,3 h.
NCH - Non-class hours: 24,2 h.
TH - Total hours: 64,5 h.

RGB302 **[!]** ***Es capaz de realizar un análisis del estado del arte de equipamientos médicos así como proponer mejoras en los equipos con respecto a dicho estado del arte***

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	18,75 h.	11,25 h.	30 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%	Observation (technical capacity, attitude and participation)

CH - Class hours: 18,75 h.
NCH - Non-class hours: 11,25 h.
TH - Total hours: 30 h.

CONTENTS

VISION BASED DIAGNOSTIC TECHNOLOGIES

- X RAY

- CAT

- MRI

- ULTRASOUND

- PET

- PET-CT

- SWALLOBLE MEDICAL DEVICES

- ENDOSCOPY (in surgery)

ANALYTICAL BASED DIAGNOSTIC TECHNOLOGIES

- BIOCHEMISTRY
- HEMATOLOGY
- MICROBIOLOGY

OTHER DIAGNOSTIC TECHNOLOGIES

- ELECTROCARDIOGRAPH (ECG)
- ELECTROENCEPHALOGRAPH (EEG)
- ELECTROMYOGRAPHY (EMG)
- CAPNOGRAPH
- BLOOD PRESSURE
- PULSE RESPIRATION RATE
- TEMPERATURE
- PULSE OXIMETRY
- BLOOD GLUCOSE LEVEL

SURGERY

- ELECTROSURGERY
- ENDOSCOPY
- ROBOTIC SURGERY
- ANESTHESIA UNITS
- HEART-LUNG MACHINE
- LASER IN SURGERY

MEDICAL TREATMENT

- RADIOTHERAPY/RADIATION THERAPY (LINAC)
- BRACHYTHERAPY
- CHEMOTHERAPY
- HEMODIALYSIS
- HIGH INTENSITY FOCUSED ULTRASOUND (HIFU)
- THERAPEUTIC ULTRASOUND (LITHOTRIPSY)

INTENSIVE CARE & LIFE SUPPORT

- INTENSIVE THERAPY UNITS
- DEFIBRILLATOR
- PACEMAKER
- INFUSION/PERFUSION PUMP

- CARDIOPULMONARY RESUSCITATION TROLLEY

- INCUBATORS

REHABILITATION and ASSISTIVE TECHNOLOGIES

- ACTIVE/PASSIVE EXERCISER

- STANDING AND BALANCING EQUIPMENT

- BALANCE/EQUILIBRIUM REHABILITATION

- WALKING REHABILITATION

- STATIC AND DYNAMIC POSTURAL CONTROL TRAINER

- ISOKINETIC SYSTEM

- UPPER EXTREMITY REHABILITATION

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Subject notes	*(No bibliography)*
Technical articles	
Presentations by external Lecturers	
Topic related web quires	
Moodle Platform	
Class presentations	
Slides of the subject	