

[GBL202] MEDICAL TECHNOLOGICAL EQUIPMENT

GENERAL INFORMATION

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

2030 AGENDA GOALS



PROFESSORS

| |
|--|
| SAENZ DE ARGANDOÑA FERNANDEZ DE GOROSTIZA, ENEKO |
| BARRENETXEA CARRASCO, MAITANE |
| BURUAGA LAMARAIN, LOREA |
| CILLA UGARTE, RODRIGO |

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

1RGB394 (1 sem)

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

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

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.

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.

1RGB392 (1 sem)

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.

1RGB393 (1 sem)

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.

1RGB390 (1 sem)

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.

1RGB391 (1 sem)

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

MAKE-UP MECHANISMS

Observation (technical capacity, attitude and participation)

CH - Class hours: 1,9 h.

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

TH - Total hours: 3 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 |
|--|----------|
| 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% |

MAKE-UP MECHANISMS

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

CH - Class hours: 40,3 h.

NCH - Non-class hours: 24,2 h.

TH - Total hours: 64,5 h.

CONTENTS

IMAGE-BASED DIAGNOSTIC TECHNOLOGIES- X RAY- CAT- MRI- ULTRASOUND- PET- PET-CT- SWALLOWABLE MEDICAL DEVICES
 - ENDOSCOPY (in surgery) ANALYTICAL 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 SURG
 ERY- ELECTROSURGERY- ENDOSCOPY- ROBOTIC SURGERY- ANESTHESIA UNITS- HEART-LUNG MACHINE- LASER IN SURGERY M
 EDICAL TREATMENT- RADIOTHERAPY/RADIATION THERAPY (LINAC)- BRACHYTHERAPY- CHEMOTHERAPY- HEMODIALYSIS- HIGH
 INTENSITY FOCUSED ULTRASOUND (HIFU)- THERAPEUTIC ULTRASOUND (LITHOTRIPSY) INTENSIVE CARE AND LIFE SUPPOR
 T- INTENSIVE THERAPY UNITS- DEFIBRILLATOR- PACEMAKER- INFUSION/PERFUSION PUMP- CARDIOPULMONARY RESUSCITAT
 ION TROLLEY- INCUBATORS REHABILITATION AND ASSISTANCE- ACTIVE/PASSIVE EXERCISER- STANDING AND BALANCING E
 QUIPMENT- BALANCE/EQUILIBRIUM REHABILITATION- WALKING REHABILITATION- STATIC AND DYNAMIC POSTURAL CONTROL
 TRAINER- ISOKINETIC SYSTEM- UPPER EXTREMITY REHABILITATION

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources

[!] *Apuntes de la asignatura*

Bibliography

(No bibliography)

- [!] *Artículos de carácter técnico*
- [!] *Charlas de ponentes externos*
- [!] *Consultas en páginas web relacionadas con el tema*
- [!] *Plataforma Moodle*
- [!] *Presentaciones en clase*
- [!] *Transparencias de la asignatura*