

## 67231 - Biomedical Electronic Technology

### Syllabus Information

**Academic Year:** 2019/20

**Subject:** 67231 - Biomedical Electronic Technology

**Faculty / School:** 110 -

**Degree:** 527 - Master's in Electronic Engineering

**ECTS:** 5.0

**Year:** 1

**Semester:** First semester

**Subject Type:** Optional

**Module:** ---

### 1.General information

#### 1.1.Aims of the course

#### 1.2.Context and importance of this course in the degree

#### 1.3.Recommendations to take this course

### 2.Learning goals

#### 2.1.Competences

#### 2.2.Learning goals

#### 2.3.Importance of learning goals

### 3.Assessment (1st and 2nd call)

#### 3.1.Assessment tasks (description of tasks, marking system and assessment criteria)

### 4.Methodology, learning tasks, syllabus and resources

#### 4.1.Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as:

- Lectures, in which the theoretical contents are explained.
- Practice sessions, in which representative problems and cases are solved.
- Laboratory sessions and related homework, where experimental setups are performed and the results are reported.
- Student oral presentations.

#### 4.2.Learning tasks

The course includes the following learning tasks:

- **Lectures** (about 20 hours)
- **Practice sessions** (about 10 hours)
- **Laboratory sessions** (about 15 hours)
- **Autonomous work** (about 40 hours, including 4 tutorial hours)

- **Study** (about 38 hours)
- **Evaluation tests** (about 2 hours)

### 4.3.Syllabus

The course will address the following topics:

#### **Section 1. Basic concepts of biomedical electronic instrumentation**

1. Overview and applications.
2. Electrophysiological fundamentals.
3. Electronic systems for medical diagnosis and therapy.

#### **Section 2. Electrosurgical systems and application to cancer treatment**

1. Introduction to electrosurgery.
2. Electrosurgical equipment.
3. Radiofrequency tumor treatment.
4. Electroporation tumor treatment.

### 4.4.Course planning and calendar

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course, will be provided on the first day of class or please refer to the EINA website.

### 4.5.Bibliography and recommended resources

[http://biblos.unizar.es/br/br\\_citas.php?codigo=67231&year=2019](http://biblos.unizar.es/br/br_citas.php?codigo=67231&year=2019)