

## 26942 - Microwaves: Propagation and Aerials

### Syllabus Information

**Academic Year:** 2020/21

**Subject:** 26942 - Microwaves: Propagation and Aerials

**Faculty / School:** 100 - Facultad de Ciencias

**Degree:** 447 - Degree in Physics

**ECTS:** 5.0

**Year:** 3

**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, practice sessions, laboratory sessions, laboratory sessions, and tutorials.

#### 4.2.Learning tasks

The course includes the following learning tasks:

- Lectures. Development and ongoing discussion of the course contents in class, based on the literature provided by the teacher.
- Practice sessions. They will consist of solving practical cases in the classroom, with active student participation.
- Laboratory sessions. Explanation of the equipment and measurement methods. Four sessions of laboratory practices with task instructions/ Four sessions in the lab task instructions are provided. As autonomous work/Autonomously, students will have to prepare a brief report which they eventually may defend. Students will have to explain assignments during the class.
- Tutorials.

#### 4.3.Syllabus

The course will address the following topics:

1. Circuits of distributed parameters.
2. Transmission systems.
3. Resonant cavities.
4. Antennas and their characterization.
5. Antenna arrays
6. Electromagnetic compatibility

#### **4.4.Course planning and calendar**

Provisional course calendar:

- Lectures and practice sessions: (3.5 ECTS), and problem-solving sessions in small groups (0.5 ECTS). The days, hours and classroom will be assigned by the Faculty of Sciences.
- Laboratory sessions (1 ECTS). The dates will be set at the beginning of the semester according to the number of enrolled students and the availability of laboratory rooms and instrumentation.
- Assignments (20 hours). It includes preparation and class presentation.
- Written exam ( 4 hours). It will be held at the end of the semester, on the date assigned by the Faculty of Sciences. For the practice laboratory exam (1 hour) the call will be published in due time for students who must do it.

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

#### **4.5.Bibliography and recommended resources**