

SUBJECT TEACHING GUIDE

G1489 - Antennas for Radar and Communication Systems

Degree in Telecommunication Technologies Engineering

Academic year 2023-2024

1. IDENTIFYING DATA					
Degree	Degree in Telecommunication Technologies Engineering			Type and Year	Optional. Year 4
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Speciality Optional Subjects				
Course unit title and code	G1489 - Antennas for Radar and Communication Systems				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. INGENIERIA DE COMUNICACIONES				
Name of lecturer	JOSE BASTERRECHEA VERDEJA				
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Office	Edificio Ing. de Telecomunicación Prof. José Luis García García. Planta: - 2. DESPACHO (S208)				
Other lecturers					

3.1 LEARNING OUTCOMES
- Properly understands characteristic antenna parameters both in transmission and in reception
- Knows the main antenna categories
- Knows typical values for the main parameters of those antenna categories
- Selects the most appropriate kind of antenna for the most common systems
- Uses antenna datasheets to extract relevant information from them
- Carries out basic antenna calculations
- Designs antennas using specialized software

4. OBJECTIVES

Get the fundamental knowledge required in the antenna field

Get the capability to assess both advantages and disadvantages of using a kind of antenna on these systems

Acquire the basic knowledge and capacities to specify antennas for these systems

Acquire the basic knowledge and capacities to design antennas for these systems

6. COURSE ORGANIZATION

CONTENTS

1	Radiation fundamentals
2	Wire antennas
3	Aperture and slot antennas
4	Antenna arrays
5	Horns and reflectors

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Practical sessions assessment (EP)	Others	Yes	No	10,00
Test type assessment after each topic (ET)	Written exam	No	No	10,00
Midterm exam (PI)	Written exam	No	No	30,00
Final exam (PF)	Written exam	Yes	Yes	50,00
TOTAL				100,00

Observations

Provided that PF reaches a minimum mark of 4 out of 10, students will be assessed according to the following formula:
 $NOTA = \text{MAX}[(0,1 EP + 0,1 ET + 0,3 PI + 0,5 PF), (0,1 EP + 0,9 PF)]$.

In case PF is lower than 4 out of 10, the assessment will be SUSPENSO (FAIL) and its numerical mark will be:

$NOTA = \text{MIN}[(4,9), (0,1 EP + 0,1 ET + 0,3 PI + 0,5 PF)]$.

The reassessment will consist on a global written exam of the subject that will account for 90% of the mark. 10% of this mark will be obtained from EP.

Observations for part-time students

It is recommended to contact the Profesor Responsable of the subject at the begin of the semester and provide him with the student timetable in order to configure the practical sessions groups.

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC

"Antenas", A. Cardama, Ll. Jofre, J. M. Rius, J. Romeu, S. Blanch, Ediciones UPC, 1º Ed. 1998, 2º Ed. 2002.

"Antenna theory and design", C. A. Balanis, John Wiley and Sons Inc., 1º Ed. 1982, 2º Ed. 1997, 3º Ed. 2005, 4ª Ed. 2016.

