

SUBJECT TEACHING GUIDE

1076 - Antennas

Master's Degree in Telecommunication Engineering

Academic year 2025-2026

1. IDENTIFYING DATA					
Degree	Master's Degree in Telecommunication Engineering			Type and Year	Compulsory. Year 1
Faculty	School of Industrial Engineering and Telecommunications				
Discipline					
Course unit title and code	1076 - Antennas				
Number of ECTS credits allocated	5	Term	Semester based (2)		
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				
E-mail	jose.basterrechea@unican.es				
Office	Edificio Ing. de Telecomunicación Prof. José Luis García García. Planta: - 2. DESPACHO (S208)				
Other lecturers					

3.1 LEARNING OUTCOMES
- Knows the main antenna categories and the typical values of their characteristic parameters both in transmission and in reception
- Carries out antenna calculations and is able to select the most appropriate kind of antenna for each case
- Designs antennas using specialized software

4. OBJECTIVES
Acquire the fundamental knowledge and capacities to specify and design antennas

6. SUBJECT PROGRAM	
CONTENTS	
1	Radiation fundamentals
2	Aperture antennas
3	Horn and reflector antennas
4	Basic antenna categories. Broadband antennas
5	Antenna arrays

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessn	%
Mid term exam (PI)	Written exam	No	Yes	30,00
Final exam (PF)	Written exam	Yes	Yes	50,00
Practical sessions assessment (EP)	Others	Yes	No	10,00
Test type assessment (ET)	Others	No	Yes	10,00
TOTAL				100,00
Observations				
Final assessment will be carried out according to the following formula:				
$\text{MARK} = \text{MAX} [(0,1 \text{ EP} + 0,1 \text{ ET} + 0,3 \text{ PI} + 0,5 \text{ PF}) , (0,1 \text{ EP} + 0,9 \text{ PF})].$				
The reassessment will be carried out with a global written exam of the subject that will account for 90% of the mark. A 10% of the mark will be assigned to the Practical sessions assessment (EP).				
Observations for part-time students				
It is recommended to contact the Lecturer 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, 2ª Ed, 2002.
"Antenna theory and design", C. A. Balanis, John Wiley and Sons Inc., 3ª Ed., 2005. 4ª Ed. 2016.