

<b>Program</b>	<b>09TT- Engineering in Telecommunication Technologies and Services</b>
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<b>Course number and name</b>	
<b>Number</b>	95000043
<b>Name</b>	Antennas Antenas
<b>Semester</b>	Y4- S7

<b>Credits and contact hours</b>	
<b>ECTS Credits</b>	5
<b>Contact hours</b>	45

<b>Coordinator's name</b>	Manuel Sierra Pérez
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<b>Specific course information</b>		
<b>Description of course content</b>		
Shows the most important kind of antennas, the analysis and synthesis models and helps in the learning of the specification, selection and design process in the antenna related to the specific system where the antenna is used.		
<b>List of topics to be covered</b>		
Antenna basic formulation. Linear, and resonant antennas Wide band and frequency independent antennas Horn, reflector and lens antennas Antenna arrays Antenna measurements		
<b>Prerequisites or co-requisites</b>		
Recommended courses on basic electromagnetism, propagation of waves and radiation mechanisms		
<b>Course category in the program</b>		
<input type="checkbox"/> R (required)	<input type="checkbox"/> E (elective)	<input checked="" type="checkbox"/> SE (selective elective)

<b>Specific goals for the course</b>
<b>Specific outcomes of instruction</b>
RA1: Obtain the adequate knowledge about basic antenna parameters to specify the antenna in the context of the communication system.
RA2: Study the specific antenna models and their main properties and limitations.

RA3: Know the electromagnetic models to analyse most important antenna types.  
 RA4: Define the main properties of antenna links and their parameters to evaluate radio-communication systems.  
 RA5: To obtain the materials, dimensions, and characteristics of the most important antenna types in radio-communication systems.

**Student outcomes addressed by the course**

CE-ST3, CE-ST4, CE-ST5  
 CG 1

**Bibliography and supplemental materials**

"Antenas" Ángel Cardama, Lluís Jofre, Juan Manuel Rius, Jordi Romeu, Sebastián Blanch Edicions UPC 1993, 1998 y 2002.  
 "Antenna Theory. Analysis and Design" Constantine Balanis John Wiley & Sons 1982 y 1997  
 "Antenna Theory and Design". W.L. Stutzman Wiley. 1981 y 2001

**Teaching methodology**

<input checked="" type="checkbox"/> <b>lectures</b>	<input checked="" type="checkbox"/> <b>problem solving sessions</b>	<input checked="" type="checkbox"/> <b>collaborative actions</b>	<input type="checkbox"/> <b>laboratory sessions</b>
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**Other:** 2h Show antenna measurement anechoic chamber.