



European School of Antennas

Fundamentals on Antennas: The antenna as a communication system building block

October 17-21, 2022

**Universidad Carlos III de Madrid
(Carlos III University of Madrid)**

Course organizer:

Daniel Segovia-Vargas

uc3m



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Fundamentals on Antennas

Introduction:

From the European antenna community (i.e., ESoA & EurAAP) it is seen that there are other scientific and industrial communities that may find problems when dealing with antenna topics, for instance, in the development of global projects. The spectrum of these communities is quite broad: Microwave engineers, Communication or Radar (i.e. mobile communication) engineers, Signal Processing engineers, Terahertz engineers and other applications, i.e., bio or medical professionals. This antenna course is devoted to explain the fundamentals on antennas to those communities, and to offer them some help on dealing with antennas. In addition, application examples will be given, as well as industrial lectures on integrated antennas (i.e. mobile or GPS), base station antennas, space application antennas and terahertz antennas. The lab-work will be done with Antenit Kit

Contents:

- Introduction to antennas. The antenna from the signal processing point of view.
- Vocabulary on antennas: Antenna parameters and fundamentals on measurements.
- Elementary antennas I: Small antennas and resonant antennas. Application: integrated antennas for mobile communication systems and GPS.
- Fundamentals on antenna arrays. Application: arrays for base stations.
- Elementary antennas II: Aperture antennas. Application: on board antennas.
- Introduction to active antennas. Application: Terahertz antennas.

Lecturers:

Prof. Daniel Segovia-Vargas, UC3M
Prof. L.E. García-Muñoz, UC3M
Prof. L.E. García-Castillo, UC3M
Prof. David González-Ovejero (Rennes University)
Prof. Magdalena Salazar-Palma, UC3M
Prof. Zbynek Raida (Brno Tech. Univ.)
Lab. Teachers: Dr. Amor and Dr. Llorente (UC3M), Mr. Umut Bulus (Anten-it)

Course Info:

- 22 hrs of teaching
- 8 hrs of laboratory
- 10 hrs of personal exercises
- Prerequisites: basic physics and maths
- Availability: 30 students
- Credits: 2 ECTS

For further information (tbc):

<http://www.euraap.org/Activities/esoa>
<https://padlet.com/mylink/syj0olwg1vbhw4d>

Social events:

- Visit to Prado Museum
- Gala Dinner at Café de Oriente (just opposite Royal Palace)

Registration:

- Non-profit institution: 440€
- Profit institution: 880€
- Online participants 220€
- Registration fee grants will be offered for up to 3 students

Accommodation (tbc):

Hotel Puerta de Toledo (just opposite to University) :
<https://www.hotelpuertadetoledo.com/>
Hotel Ganivet (just by the university)
<https://www.hotelganivet.com/es/>

Deadlines

- Deadline for registration is 10th October 2022
- Deadline for payment is 10th october 2022. For payment go through:
<https://www.flowte.me/storefront/?v=378#>

Venue:

Universidad Carlos III, Puerta de Toledo Campus
Glorieta Puerta de Toledo s/n
28005 Madrid

Contact:

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