Third edition of the **SUMMER SCHOOL** *on*

Microwaves and mm-waves for the Design of Advanced Wireless Links: Communication, Sensing and Power Transfer

June 15-20, 2026
Department of Information Engineering, Via G. Caruso 16, Pisa, Italy

https://www.dii.unipi.it/microwaves-and-mm-waves-design-advanced-wireless-links-communication-sensing-and-power-transfer

Preliminary program (*last update: November 2025*)

Day	*Morning class*	*Afternoon class*
Monday **June 15** **9.00-18.00**	**Welcome message and Introduction to the Summer School** Paolo Nepa *University of Pisa (SS coordinator)* **Electromagnetic wave propagation: a ray-optical picture** *Giuliano Manara, University of Pisa*	**Guided wave modeling in coaxial cables, printed lines and waveguides** *Alice Buffi, University of Pisa* **Microwave device modeling** *Simone Genovesi ,University of Pisa*
Tuesday **June 16** **9.00-18.00**	**The antenna as a system component** *Paolo Nepa, University of Pisa)* **Analysis and design of passive devices: modeling and numerical simulation** *Andrea Michel, University of Pisa* 	**Fundamentals of transceivers for communication systems** *Francesco Pieri, University of Pisa* **How antenna arrays advance wireless system performance** *Paolo Nepa, University of Pisa* *In the evening, in Pisa downtown, 70,000 wax candles and fireworks will illuminate the Lungarni for one magical night (do not miss LUMINARA 2026!)*

Wednesday **June 17** **Educational visit and lecturers at Medicina Radio Astronomical Station (Bologna) 8.00-20.00**	Transfer from Pisa to Medicina (by private bus)  **Antennas for radio astronomy** *Pietro Bolli, INAF, Florence* **Radio astronomical receivers** *Marco Poloni, INAF, Bologna* **Protection of radio astronomy** *Federica Caputo, INAF, Bologna* *Class-building lunch*	**Guided tour of the Visitor Center** *Simona Righini, INAF, Bologna* **Optical fibre in radio astronomy** *Giovanni Tartarini, University of Bologna* *Federico Perini, INAF, Medicina, Bologna* **Guided tour to the antenna sites** *Simona Righini, , INAF, Bologna* Return to Pisa (by private bus)
Thursday **June 18** **9.00-18.00**	**Manipulating microwaves and mm-waves with periodic structures** *Filippo Costa, University of Pisa* **Wave propagation in complex environments and multipath models** *Pierpaolo Usai, University of Pisa*	**Fundamentals of satellite communications: a hands-on approach** *Filippo Giannetti, University of Pisa* ***Lecture from the attendee of the 2025 edition of the Summer School who presented the best project work*** *TBD*
Friday **June 19** **9.00-18.00**	**Applications at microwaves and mm-waves** *Invited Speaker from ICT company, TBD*	**Devices and architectures for battery-less RF systems** *Alessandra Costanzo, University of Bologna*
	Applications at microwaves and mm-waves *Invited Speaker from ICT company, TBD*	**Wireless communication systems and technologies: from the basics to 5G standards** *Giacomo Bacci, University of Pisa*
Saturday **June 20** **9.00-16.00**	**Automotive mm-wave radar sensors** *Sergio Saponara, University of PIsa* **Applications at microwaves and mm-waves** *Invited Speaker from ICT company, TBD*	**Project work assignment** *Paolo Nepa, University of Pisa* *Project work: students interested to earn the 6 ECTS credits will be required to make a presentation (Powerpoint, Canva, etc…) with a voice-over comment for a total duration of less than 20 min, where the student addresses a topic at his/her choice yet related to the Summer School contents* ***The project work must be submitted by the end of August 2026***