

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, University of Pisa, Pisa, Italy

<https://www.dii.unipi.it/microwaves-and-mm-waves-design-advanced-wireless-links-communication-sensing-and-power-transfer-2026>

Summer School Program *(last update: May 16, 2026)*

Day	Morning class	Afternoon class
Monday June 15 9.00-18.00	Welcome message Introduction to the Summer School objectives and contents Paolo Nepa, University of Pisa (Summer School 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 Modeling and characterization of mm-Wave compound semiconductor devices for high power applications Antonio Mordà University of Milano-Bicocca, Milano
Tuesday June 16 9.00-18.00	The antenna as a system component Paolo Nepa, University of Pisa Fundamentals of satellite communications: a hands-on approach Filippo Giannetti, University of Pisa 	Fundamentals of transceivers for communication systems Francesco Pieri, University of Pisa Manipulating microwaves and mm-waves with periodic structures Filippo Costa, University of Pisa <i>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!)</i>

Wednesday June 17 Educational visit and lectures Medicina Radio Astronomical Station (Bologna) 8.00-20.00	Transfer from Pisa to Medicina (by private bus) Antennas for radio astronomy <i>Pietro Bolli, INAF, Florence</i> Radio astronomical receivers <i>Marco Poloni, INAF, Medicina, Bologna</i> Protection of radio astronomy <i>Federica Caputo, INAF, Medicina, Bologna</i> <i>Class-building lunch</i>	Guided tour of the Visitor Center <i>Simona Righini, INAF, Medicina, Bologna</i> Optical fibre in radio astronomy <i>Giovanni Tartarini, University of Bologna</i> <i>Federico Perini, INAF, Medicina, Bologna</i> Guided tour to the antenna sites <i>Simona Righini, INAF, Medicina, Bologna</i>  Link to video gallery Return to Pisa (by private bus)
Thursday June 18 9.00-18.00	Advanced Systems for High Throughput Satellite Communications <i>Martina Angelone, European Space Agency, Noordwijk, The Netherlands</i> Advanced Distributed Antenna Systems: RF Propagation Insights and Design Principles <i>Marco Fantuzzi, JMA Wireless, Bologna</i>	Analysis and design of passive devices: modeling and numerical simulation <i>Andrea Michel, University of Pisa</i> Microwaves and High-Speed Photonics: Applications to 6G Systems <i>Roberto Sabella, Ericsson Research, Pisa</i>
Friday June 19 9.00-18.00	Wireless Transport for 5G backhaul ... and more <i>Francesca Rosati, Nokia Italia, Milano</i> 5G mm-wave: Industry Perspectives on Design and Deployment <i>Dr. Danilo De Donno</i> <i>Huawei Italy Research Center, Milano</i>	Devices and architectures for battery-less RF systems <i>Alessandra Costanzo, University of Bologna</i> Wireless communication systems and technologies: from the basics to 5G standards <i>Giacomo Bacci, University of Pisa</i>
Saturday June 20 9.00-16.00	Automotive mm-wave radar sensors <i>Sergio Saponara, University of Pisa</i> Wave propagation in complex environments and multipath models <i>Pierpaolo Usai, University of Pisa</i>	Project-work assignment <i>Paolo Nepa, University of Pisa</i> <i>Project work description: 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 between 15 and 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</i>