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COURSE: Antennas

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ACADEMIC YEAR: 2017-18

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TYPE OF EDUCATIONAL ACTIVITY: Affine

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TEACHER: Vincenzo Fiumara

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website:

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phone: +39 0971 205197

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mobile (optional):

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Language: Italian

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ECTS: 6

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n. of hours: 40 (lessons)  
12 ( tutorials)

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Campus: Potenza  
Dept./School: Scuola di Ingegneria  
Program: Ingegneria Informatica e  
delle Tecnologie dell'Informazione

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Semester: I

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#### EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The students should acquire the main elements of the antennas theory.

At the end of the course the students should be able to autonomously analyze and design transmitting and receiving antenna systems.

Moreover, the students should acquire a technical vocabulary which allow them to discuss issues relevant to antenna systems and should be able to autonomously analyze the scientific and technical literature.

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#### PRE-REQUIREMENTS

Fundamentals of electromagnetic fields and circuits.

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#### SYLLABUS

Radiation from electric and magnetic sources. Linear wire antennas. Hallen's integral equation. Method of moments. Transmitting and receiving antennas. Friis transmission formula. Reciprocity theorem. Duality theorem. Equivalence theorem. Image theorem. Antenna arrays. Linear arrays. Binomial array. Fourier synthesis. Phased arrays. Planar arrays. Yagi-Uda antennas. Reflector antennas (fundamentals). Aperture antennas (fundamentals). Environmental impact of electromagnetic radiation.

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#### TEACHING METHODS

Theoretical lessons (40 hours) and classroom tutorials (12 hours).

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#### EVALUATION METHODS

Oral examination.

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#### TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

C.Gennarelli, F.D'Agostino, Elementi di teoria delle antenne, Florio Edizioni Scientifiche.

R.E.Collin, Antennas and Radiowave Propagation, Mc Graw Hill.

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#### INTERACTION WITH STUDENTS

The teacher meets students upon request.

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#### EXAMINATION SESSIONS (FORECAST)<sup>1</sup>

19/01/2018, 21/02/2018, 22/03/2018, 19/04/2018, 23/05/2018, 20/06/2018, 04/07/2018, 18/07/2018, 19/09/2018, 19/10/2018, 16/11/2018, 14/12/2018.

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<sup>1</sup>Subject to possible changes: check the web site of the Teacher or the Department/School for updates.



Università degli Studi della Basilicata  
**Scuola di Ingegneria**

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SEMINARS BY EXTERNAL EXPERTS    YES     NO

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FURTHER INFORMATION

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Scuola di Ingegneria – Viale dell'Ateneo Lucano, 10 – 85100 Potenza

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