COURSE: Electromagnetics			
ACADEMIC YEAR: 2019-20			
TYPE OF EDUCATIONAL ACTIVITY: Affine			
TEACHER: Vincenzo Fiumara			
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phone: +39 0971 205197		mobile (optional):	
Language: Italian			
ECTS: 9	n. of hours: 60 (lessons) 18 (tutorials)	Campus: Potenza Dept./School: Dipartimento di Matematica, Informatica ed Economia. Program: Scienze e Tecnologie Informatiche.	Semester: I and II

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

The students should acquire the basic elements of the classical electromagnetic theory, particularly dealing with free and guided wave propagation and circuital analysis of lines with distributed elements.

At the end of the course the student should be able to understand, analyze and model phenomena dealing with free and guided electromagnetic propagation.

Moreover, the students should acquire a technical vocabulary which allow them to discuss issues relevant to electromagnetic wave propagation and should be able to read and understand textbooks on classical electromagnetic theory.

PRE-REQUIREMENTS

Fundamentals of mathematics and physics.

SYLLABUS

Maxwell's equations. Constitutive relationship. Boundary conditions. Poynting's theorem. Uniqueness theorem. Plane waves. Snell's law. Fresnel's formulas. Total internal reflection. Brewster angle. Skin depth. Metallic waveguides. Transmission lines. TEM, TE and TM modes. Rectangular waveguide. Dominant mode. Phase and group velocity.

TEACHING METHODS

Theoretical lessons (60 hours) and Classroom tutorials (18 hours).

EVALUATION METHODS

Oral examination.

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

G.Franceschetti, Campi Elettromagnetici, Boringhieri.

G.Gerosa, P.Lampariello, Lezioni di Campi Elettromagnetici, Ed. Ingegneria 2000.

INTERACTION WITH STUDENTS

The teacher meets students upon request.

EXAMINATION SESSIONS (FORECAST)[1]

22/01/2020, 19/02/2020, 18/03/2020, 22/04/2020, 20/05/2020, 17/06/2020, 08/07/2020, 22/07/2020,

[1]Subject to possible changes: check the web site of the Teacher or the Department/School for updates.

23/09/2020, 21/10/2020, 18/11/2020, 16/12/2020.
SEMINARS BY EXTERNAL EXPERTS YES □ NO ⊟
FURTHER INFORMATION