COMMUNICATION ENGINEERING AND ELECTRONIC TECHNOLOGIES

(Lecce - Università degli Studi)

Teaching APPLIED ELECTROMAGNETICS

GenCod A006430

Owner professor Luciano TARRICONE

Reference professors for teaching GIUSEPPINA MONTI, Luciano TARRICONE

Teaching in italian APPLIED ELECTROMAGNETICS

Teaching APPLIED ELECTROMAGNETICS

SSD code ING-INF/02

Reference course COMMUNICATION ENGINEERING AND ELECTRONIC

Course type Laurea Magistrale

Credits 9.0

Teaching hours Front activity hours: 81.0

For enrolled in 2022/2023

Taught in 2023/2024

Course year 2

Language ENGLISH

Curriculum Telecom Applications

Location Lecce

Semester First Semester

Exam type Oral

Assessment Final grade

Course timetable https://easyroom.unisalento.it/Orario

BRIEF COURSE DESCRIPTION	Il corso propone alcuni esempi di applicazioni scientifiche e industriali dell'Eletromagnetismo, con particolare riferimento al BioElettromagnetismo, alle applicazioni biomediche e ai sistemi wireless intelligenti
REQUIREMENTS	Conoscenze approfondite di Campi Elettromagnetici e Microonde
COURSE AIMS	Il corso intende formare nello studente una spiccata capacità di applicare le conoscenze teoriche dell'Elettromagnetismo e delle Microonde a casi reali
TEACHING METHODOLOGY	Lezioni frontali, esercitazioni per la soluzione di problemi pratici, esercitazioni al calcolatore, esercitazioni in laboratorio, seminari
ASSESSMENT TYPE	*Sviluppo e realizzazione di un progetto pratico (verificare la capacità di risolvere problemi pratici) e prova orale (verificare la capacità di analisi, critica, ed esposizione degli argomenti)*

FULL SYLLABUS	Please see the reference notes in the section related to the reference books/material to identify the materials to be studied for each part of the course's program. ▪ Introduction to the course [1]: Chapter 3, 4 and 5 ▪ Introduction to EMC [1]: Chapter 1 ▪ BioEM [2]: Chapter 1, 2, 3 and 4 [3]: Introduction, Chapter 1, 8 and 9 Professor's notes on EM Exposure Safety Standards and Laws Three Professor's papers on BEM modelling Professor's notes on numerical dosimetry Professor's notes on classification of EM sources Professor's notes on ELF fields emitted by Power lines and their reduction [1], [4], Selected papers by (i) Hodgkin and Huxley, (ii) Colquhoun and Hawkes ▪ Wireless Systems and EM enabling technologies Professor's notes on Radiopropagation Professor's notes on RFID Professor's notes on new materials and technologies [5]: Chapter 6 One Professor's paper on the convergence of EM Technologies towards IOT [6], [7] ▪ Radar Systems for meteorology Professor's notes [8], [9] ▪ Shielding and Measurement Environments [1]: Chapter 11 [11]: Chapter 5 and 6 [10], [11] - Measurement Techniques and Instrumentations Professor's notes
REFERENCE TEXT BOOKS	Books: [1] C. Paul, Electromagnetic Compatibility (EMC) [2] J. Malmivuo, R. Plomsey, Bioelectromagnetics (BEM) [3] C. Polk, E. Postow, CRC Handbook of Biological Effects of EM Fields [4] B. Hille, Ionic Channels of Eccitable Membranes [5] L. Tarricone, A. Esposito, Grid Computing for EM [6] T. Rappaport, Wireless Communications [7] K. Finkenzeller, D. Muller, RFID Handbook [8] M. A. Richard, J. Scheer and W. Holm, Principles of Modern Radar [9] R. J. Doviak, D. S. Zrnic, Doppler Radar and Weather Observations [10] L. H. Hemming, EM Anechoic Chambers [11] V. P. Kodali, Engineering EMC