

Academic Year: (2019 / 2020)

Review date: 21-05-2019

Department assigned to the subject:

Coordinating teacher: SEGOVIA VARGAS, DANIEL

Type: Electives ECTS Credits : 6.0

Year : 1 Semester :

REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

It is expected that students have knowledge on microwave circuits and antennas

OBJECTIVES

CB6 achieve and understand knowledge that can be the starting point for an original research work

CB7 Students will be able to apply the achieved knowledge in the resolution of new problems in interdisciplinary and broad areas

CB9 Students will be able to transmit their conclusions and new knowledge to both specialist and non-specialist public in a clear and unambiguous way.

CB10 Students will achieve the learning abilities so that they can go on studying by themselves.

CG1 Understanding of the techniques needed for the microwave and antennas fields.

CG4 Capacity to realize critical analysis and synthesis of new ideas.

CG5 Capacity to communicate the new ideas, both in English and in Spanish, to the international scientific community.

CE1 Students will be able to realize a critical analysis of technic and scientific papers in the field of RF subsystems for communication systems.

CE2 Students will achieve an exhaustive perspective in the state of the art for RF subsystems for communication systems.

CE3 Students will be able to develop original RF subsystems for communication systems. They will be able to present their work in international conferences.

CE4 Students will be able to apply maths, statistics and scientific knowledge to RF subsystems for communication systems

CE5 Students will have the ability to design RF experiments, analyze and interpret the results.

CE6 Understand and be able to work with the fundamental concepts on RF subsystems for communication systems: active antennas, antenna arrays, broadband antennas, diplexers, filters, amplifiers, oscillators and mixers.

- Develop capacities for understanding radio systems.

- Provide the students with enough knowledge to analyze and design new RF communication systems.

- Discuss the results in international forums.

DESCRIPTION OF CONTENTS: PROGRAMME

Chapter 1: Introduction to Computational Electromagnetics.

Chapter 2: Advanced Topics on Microwave Filters.

Chapter 3: Antenna as RF subsystem: active antennas, antenna arrays, wideband antennas.

Chapter 4: Active Circuits for Microwave Applications

Chapter 5: Introduction to Terahertz Technology & Applications

Chapter 6: Measurement techniques for microwave devices and antennas.

LEARNING ACTIVITIES AND METHODOLOGY

There will be different tuition activities coordinated by the professor of the different parts of the syllabus.

ASSESSMENT SYSTEM

The evaluation will be based on continuous assessment (100%) well by partial exams well by developing works on the different chapters of the syllabus

% end-of-term-examination:	60
% of continuous assessment (assignments, laboratory, practicals...):	40

BASIC BIBLIOGRAPHY

- C. A. Balanis Advanced Engineering Electromagnetics, John Wiley & Sons, Inc., 1989
- Guillermo Carpintero, Enrique Garcia-Munoz, Hans Hartnagel, Sascha Preu, Antti Raisanen Semiconductor TeraHertz Technology: Devices and Systems at Room Temperature Operation , John Wiley & Sons, 2015
- M. Salazar-Palma, T. K. Sarkar, L.E. Garcia-Castillo, T. Roy, and A.R. Djordjevic Iterative and Self-Adaptive Finite-Elements in Electromagnetic Modeling, ARTECH HOUSE, 1998
- Richard J. Cameron, Chandra M. Kudsia, Raafat R. Mansour Microwave Filters for Communications Systems, John Wiley & Sons, 2007