30328 - Electronics for Communications

Syllabus Information

Academic Year:	2018/19
Subject:	30328 - Electronics for Communications
Faculty / School:	110 -
Degree:	438 - Bachelor's Degree in Telecomunications Technology and Services Engineering
ECTS:	6.0
Year:	3
Semester:	Second semester
Subject Type:	Compulsory
Module:	---

General information

Aims of the course

Context and importance of this course in the degree

Recommendations to take this course

Learning goals

Competences

Learning goals

Importance of learning goals

Assessment (1st and 2nd call)

Assessment tasks (description of tasks, marking system and assessment criteria)

Methodology, learning tasks, syllabus and resources

Methodological overview

The learning process that is designed for this subject is based on the following: Class work: 2.4 ECTS (60 hours) 1. Participatory Lectures (30 hours) in which the theoretical foundations of the contents of the subject are presented and where student participation is encouraged. The exposition of bibliographic material previously delivered to the student (or deposited in the computer means provided by the University for this purpose) and its development on the board for proper follow-up combined. 2. Types of problems and case studies classroom (15 hours) in which problem solving and practical cases proposed by the teacher of the fundamentals presented in lectures are held. 3. Laboratory practices (15 hours) in

which students will perform 5 sessions of practices of 2 hours in labs Ada Byron Building. In small groups, a training series related to the contents of the subject and to consolidate the set of theoretical concepts are made. This activity will be conducted in the laboratory in person. Non-contact work: 3.6 ECTS (90 hours) 4. Performing practical work and tutored by teachers, based on the contents of the subject and related to the design and development of a communications system. Possibility of attending seminars related to the topic mentioned with the participation of external guests to them. 5. Study. 6. Personal attention to students through tutorials. 7. Evaluation tests.

Learning tasks
PROGRAMMING LABORATORY PRACTICE AND SEMINARS Throughout the course some practices will be conducted in order to verify in the laboratory the concepts of the subject , besides be the possibility of a seminar held .

Syllabus
1. Introduction 1.1 . Introduction to Electronic Communications 1.2 . Review basics 1.3 . Architectures of a communication system : mixing , synthesis , demodulation . 2. Systems synthesis , modulation and demodulation 2.1 . modulators 2.2 . demodulators 2.3 . Analog synthesis Blocks 2.4 . Blocks Digital Synthesis 2.5 . digital techniques in electronic communications 3. Specifications of transmitters and receivers 3.1 . Transmission Equipment 3.2 . Receiving equipment 4. Non-ideal Processes 4.1 . Distortion 4.2 . Noise

Course planning and calendar
Schedule sessions and presentation of works The schedule of the course, both of the sessions in the classroom, laboratory sessions, will be determined by the academic calendar that the center established for the corresponding course. Bibliography and resources ital media provided by the University of Zaragoza, enrolled students access to a set of lecture notes prepared by responsible teachers will be provided on the subject.

The subject is taught in the second semester of the third year of the degree with a total of 6 ECTS credits. The main activities of the same are divided into lectures, problem solving and practical cases in class, laboratory practices and performing a puppet work related to course content. This distribution aims to facilitate the understanding and assimilation of all concepts, both conceptual and practical, presented in the course so that the skills acquired in the same are covered.

Bibliography and recommended resources
P.L.D ABRIE, "Design of RF and Microwave Amplifiers and Oscillators" Artech House, 2005. L.BESSER, "Practical RF circuit design for modern wireless systems" Artech House, 2003. J.MITOLA, "Software Radio Architecture", John Wiley & Sons, 2004. J.S.BEASLEY, "Modern electronic communication", Prentice Hall, 2008 C.W.KRAUSS, "Solid state communication systems", John Wiley & Sons, 1994. F.ELLINGER, "Radio Frequency Integrated Circuits and Technologies", Springer, 2007.