Login

Politecnico di Torino

Academic Year 2008/09 (first time established in A.Y.2007/08)

01LSTJA

RF Electronics

1st degree and Bachelor-level of the Bologna process in Electronic And Computer Engineering - Vercelli (II FACOLTA' DI INGEGNERIA)

Teacher	Status	SSD	Les	Ex	Lab	Years Stability

SSD	CFU	Activities	Area context
ING-INF/01	5	D - A scelta dello studente	A scelta dello studente

Objectives of the course

In the course, the most important issues relative to the RF circuit and system analysis and design will be presented and investigated. In fact the course will be focused on methodologies and techniques suited for RF and microwave applications for passive and active, distributed and lumped elements. A relevant part of the course will be devoted to make the students familiar with the commercial CAD tools adopted in the actual design framework.

Expected skills

Acquire acquaintance with the problematic of the RF circuits and systems.
Transfer the skills learned in the electronic courses to the high frequency circuits being aware of the different environment.
Integrate the knowledge obtained in the electronic courses together with the competences achieved from the electromagnetic ones. Learn how to use commercial RF cad tools for the analysis and design of RF and microwave circuits.

Prerequisites

Electronic and electromagnetic courses.

Syllabus

Introduction on the most used, terrestrial and space applications of RF and microwave circuits with examples of actual implementations and enabling technologies.
Hybrid and monolithic circuit for microwave and RF applications. Reassess of concepts on distributed and lumped elements.
Analysis and design techniques at RF and microwave: S-parameter, stability. Linear amplifier design concepts and application within commercial CAD tools. Maximum gain and minimum noise amplifier design strategies. Power amplifier basics.

Laboratories and/or exercises

Exercises to apply the theory seen during the lesson hours.
Labs focuses on the usage of CAD tools for the analysis and design of microwave and RF circuits and systems.

Bibliography

Material supplied by the teacher. Suggested books (available the Faculty library), Collin: Fundations for microwave engineering, Gonzales microwave transistor amplifiers: analysis and design.

Revisions / Exam

Evaluation of the individual homeworks, oral test, practical test on the usage capabilities of the CAD tool adopted within the course.

Programma definitivo per l'A.A.2008/09

BACK

m@il