

230034 - CIRCAF - High-Frequency Circuits

Coordinating unit: 230 - ETSETB - Barcelona School of Telecommunications Engineering
 Teaching unit: 739 - TSC - Department of Signal Theory and Communications
 Academic year: 2019
 Degree: BACHELOR'S DEGREE IN ELECTRONIC SYSTEMS ENGINEERING (Syllabus 2009). (Teaching unit Compulsory)
 BACHELOR'S DEGREE IN ENGINEERING PHYSICS (Syllabus 2011). (Teaching unit Optional)
 BACHELOR'S DEGREE IN TELECOMMUNICATIONS TECHNOLOGIES AND SERVICES ENGINEERING (Syllabus 2015). (Teaching unit Optional)
 ECTS credits: 4,5 Teaching languages: Catalan

Teaching staff

Coordinator: -

Others:

Degree competences to which the subject contributes

Generical:

2. They will have acquired knowledge related to experiments and laboratory instruments and will be competent in a laboratory environment in the ICC field. They will know how to use the instruments and tools of telecommunications and electronic engineering and how to interpret manuals and specifications. They will be able to evaluate the errors and limitations associated with simulation measures and results.

Transversal:

1. SELF-DIRECTED LEARNING - Level 2: Completing set tasks based on the guidelines set by lecturers. Devoting the time needed to complete each task, including personal contributions and expanding on the recommended information sources.

Teaching methodology

Learning objectives of the subject

Study load

Total learning time: 112h 30m	Hours large group:	26h	23.11%
	Hours small group:	13h	11.56%
	Self study:	73h 30m	65.33%

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Content

(ENG) Tema 1. Línies de transmissió	Learning time: 5h 15m Theory classes: 1h 30m Practical classes: 1h Self study : 2h 45m
(ENG) Tema 2. Línies planars	Learning time: 4h 12m Theory classes: 1h 30m Practical classes: 0h 30m Self study : 2h 12m
(ENG) Tema 3. Carta de Smith i adaptació d'impedàncies	Learning time: 4h 44m Theory classes: 1h 30m Practical classes: 0h 45m Self study : 2h 29m
(ENG) Tema 4. Representació matricial de circuits d'alta freqüència	Learning time: 5h 15m Theory classes: 2h Practical classes: 0h 30m Self study : 2h 45m
(ENG) Tema 5. Circuits passius de microones	Learning time: 33h 28m Theory classes: 10h Practical classes: 5h 19m Self study : 18h 09m
(ENG) Tema 6. Circuits actius de microones	Learning time: 16h 42m Practical classes: 3h 30m Self study : 13h 12m

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(ENG) Tema 7. Circuits integrats de microones	Learning time: 5h 15m Theory classes: 2h Practical classes: 0h 30m Self study : 2h 45m
(ENG) Tema 8. Eines CAD per a simulació de circuits d'alta freqüència: principis de funcionament i ús.	Learning time: 14h 35m Theory classes: 1h Self study : 13h 35m
(ENG) Tema 9. Sistemes i instruments bàsics de microones	Learning time: 13h 04m Theory classes: 1h 56m Laboratory classes: 6h Self study : 5h 08m

Planning of activities

(ENG) Proves de resposta curta (Control)
(ENG) Pràctica de laboratori
(ENG) Altres activitats
(ENG) Proves de resposta llarga (Examen Final)

Qualification system

Regulations for carrying out activities

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Bibliography

Basic:

Barlabé i Dalmau, A.; Muñoz Porcar, C. La carta de Smith: aplicacions. 1a ed. Aula Politècnica. Barcelona: Edicions UPC, 2001. ISBN 8483015056.

Bará, J. Circuitos de microondas con líneas de transmisión [on line]. Barcelona: Edicions UPC, 1994 [Consultation: 06/02/2015]. Available on: <<http://hdl.handle.net/2099.3/36161>>. ISBN 9788489636552.

Pozar, D.M. Microwave engineering. 4th ed. Hoboken: Wiley, 2012. ISBN 9780470631553.