

SUBJECT TEACHING GUIDE

G827 - Analogue and Mixed Electronics

Degree in Telecommunication Technologies Engineering

Academic year 2019-2020

1. IDENTIFYING DATA					
Degree	Degree in Telecommunication Technologies Engineering			Type and Year	Optional. Year 3
Faculty	School of Industrial Engineering and Telecommunications				
Discipline	Subject Area: Electronic Systems Design				
Course unit title and code	G827 - Analogue and Mixed Electronics				
Number of ECTS credits allocated	6	Term	Semester based (1)		
Web					
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. TECNOLOGIA ELECTRONICA E INGENIERIA DE SISTEMAS Y AUTOMATICA				
Name of lecturer	JOSE ANGEL MIGUEL DIAZ				
E-mail	joseangel.miguel@unican.es				
Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 3. DESPACHO PROFESOR (S3080)				
Other lecturers	YOLANDA LECHUGA SOLAEGUI				

3.1 LEARNING OUTCOMES

- Abilities for the analysis and design basic analog circuits
- Know the most important circuits and analog electronics applications

4. OBJECTIVES

6. COURSE ORGANIZATION

CONTENTS	
1	CAD tools for analog design
2	Transconductance CMOS Amplifiers. Biasing. Small signal operation
3	Frequency Response CMOS Amplifiers
4	Noise. Noise Amplifiers
5	OTA and Operational Amplifiers Linear and non-linear operations. Comparators. Analog CMOS Multipliers
6	Signal Generator and oscillators
7	Design of Continuous-time filters, RC and gm-C
8	Amplifiers and Filters SC
9	Analog-to-digital converters. Digital-to-analog converters. Architectures

7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Exercises and Theory	Written exam	No	Yes	40,00
Laboratory work	Laboratory evaluation	No	Yes	30,00
Exams and oral presentations	Activity evaluation with Virtual Media	No	No	30,00
TOTAL				100,00
Observations				
Observations for part-time students				

8. BIBLIOGRAPHY AND TEACHING MATERIALS

BASIC
Allen, P. Holdberg, D. CMOS Analog Circuit Design (3 ed) Oxford University Press, 2011
Sedra, a.S., Smith, K.C. Microelectronic Circuitos Oxford University Press, 2011