Course guides
330067 - SEL - Electronic Systems

Last modified: 05/05/2020

Unit in charge: Manresa School of Engineering
Teaching unit: 750 - EMIT - Department of Mining, Industrial and ICT Engineering.

Degree: BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Compulsory subject).
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Compulsory subject).
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Compulsory subject).
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2009). (Compulsory subject).
BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2016). (Compulsory subject).
BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2016). (Compulsory subject).
BACHELOR'S DEGREE IN CHEMICAL ENGINEERING (Syllabus 2016). (Compulsory subject).

Academic year: 2020 **ECTS Credits:** 6.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: VICTOR BARCONS XIXONS

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. (ENG) Coneixement i utilització de la teoria de circuits.
2. (ENG) Coneixement dels fonaments de l'electrònica.

Transversal:
3. TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.
4. EFFECTIVE USE OF INFORMATI0N RESOURCES - Level 2. Designing and executing a good strategy for advanced searches using specialized information resources, once the various parts of an academic document have been identified and bibliographical references provided. Choosing suitable information based on its relevance and quality.
5. 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

Type	Hours	Percentage
Self study	90,0	60.00
Hours large group	45,0	30.00
Hours small group	15,0	10.00

Total learning time: 150 h

CONTENTS

(ENG) 1. INTRODUCCIÓ ALS COMPONENTS ELECTRÒNICS

Full-or-part-time: 26h
Theory classes: 8h
Laboratory classes: 2h
Self study : 16h

(ENG) 2. CONCEPTES BÀSICS D'ELECTRÒNICA ANALÒGICA

Full-or-part-time: 34h
Theory classes: 10h
Laboratory classes: 4h
Self study : 20h

(ENG) 3. CONCEPTES BÀSICS D'ELECTRÒNICA DIGITAL

Full-or-part-time: 51h
Theory classes: 15h
Laboratory classes: 6h
Self study : 30h

(ENG) 4. CONVERTIDORS A/D I D/A

Full-or-part-time: 39h
Theory classes: 12h
Laboratory classes: 3h
Self study : 24h

ACTIVITIES

(ENG) 1. INTRODUCCIÓ AL LABORATORI D'ELECTRÒNICA

Full-or-part-time: 45h
Laboratory classes: 15h
Self study: 30h

(ENG) 2. PRÀCTIQUES DE LABORATORI DE SISTEMES ELECTRÒNICS

Full-or-part-time: 27h
Laboratory classes: 2h
Self study: 25h

(ENG) 3. PROVA ESCRITA

Full-or-part-time: 18h
Theory classes: 1h
Self study: 17h

(ENG) 4. PROVA ESCRITA

Full-or-part-time: 15h
Theory classes: 1h
Guided activities: 14h

GRADING SYSTEM

BIBLIOGRAPHY

Basic:
- Frenzel, Louis E. Electronics explained: the new systems approach to learning electronics [on line]. Burlington: Newnes, 2010 [Consultation: 31/05/2019]. Available on: https://discovery.upc.edu/iii/encore/record/C__Rb1425095?lang=cat. ISBN 1856177009.
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Complementary:
- Kybett, H.; Boysen, E. All new electronics self-teaching guide. 3rd ed. Indianapolis: Wiley, 2008. ISBN 9780470289617.
- Trzynadlowski, Andrzej M. Introduction to modern power electronics. 2nd ed. Hoboken: Wiley, 2010. ISBN 9780470401033.