

Course guide

320158 - SEL - Electronic Systems

Last modified: 20/05/2025

Unit in charge: Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 710 - EEL - Department of Electronic Engineering.

Degree: BACHELOR'S DEGREE IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT ENGINEERING (Syllabus 2010). (Compulsory subject).

Academic year: 2025 **ECTS Credits:** 6.0 **Languages:** Catalan

LECTURER

Coordinating lecturer: Joan Salaet

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

CED10-DIDP. Knowledge of principles of material science and technology for the selection of materials and their processes, and their impact on the design, redesign, and development of products. (Common module for the industrial branch).

CED16-DIDP. Knowledge of basic electronic components and their application to problem-solving in the field of engineering. (Common module for the industrial branch).

CED17-DIDP. Knowledge of the fundamentals of digital electronics and their application to problem-solving in the field of engineering. (Common module for the industrial branch).

CED18-DIDP. Knowledge of the characteristics of digital processors, their operation, and their application to problem-solving in the field of engineering. (Common module for the industrial branch).

CED19-DIDP. Knowledge of the characteristics and applications of sensors and signal conditioners. (Common module for the industrial branch).

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

STUDY LOAD

Type	Hours	Percentage
Hours medium group	15,0	10.00
Self study	90,0	60.00
Hours small group	15,0	10.00
Hours large group	30,0	20.00

Total learning time: 150 h



CONTENTS

TOPIC 0: INTRODUCTION TO THE SUBJECT

Description:

Related activities:

AV0

Full-or-part-time: 1h

Theory classes: 1h

Description:

Full-or-part-time: 25h

Theory classes: 5h

Practical classes: 3h

Laboratory classes: 2h

Self study : 15h

Description:

Full-or-part-time: 15h 10m

Theory classes: 4h

Practical classes: 2h

Self study : 9h 10m

Description:

Specific objectives:

Related activities:

Full-or-part-time: 27h 40m

Theory classes: 5h

Practical classes: 2h

Laboratory classes: 4h

Self study : 16h 40m

Description:

Specific objectives:

Related activities:

Full-or-part-time: 25h

Theory classes: 5h

Practical classes: 3h

Laboratory classes: 2h

Self study : 15h



Description:**Specific objectives:****Related activities:****Full-or-part-time:** 25h

Theory classes: 5h

Practical classes: 2h

Laboratory classes: 3h

Self study : 15h

Description:**Specific objectives:****Related activities:****Full-or-part-time:** 31h 10m

Theory classes: 5h

Practical classes: 3h

Laboratory classes: 4h

Self study : 19h 10m

GRADING SYSTEM

BIBLIOGRAPHY**Basic:**

- Floyd, Thomas L. Fundamentos de sistemas digitales [on line]. 11a ed. Madrid: Pearson Educación, 2016 [Consultation: 19/09/2022]. Available on:

https://www-ingebook-com.recursos.biblioteca.upc.edu/ib/NPcd/IB_BooksVis?cod_primaria=1000187&codigo_libro=6120.

- Malvino, Albert Paul. Principios de electrónica [on line]. 7a ed. Madrid: McGraw-Hill, 2007 [Consultation: 26/09/2022]. Available on: https://www-ingebook-com.recursos.biblioteca.upc.edu/ib/NPcd/IB_BooksVis?cod_primaria=1000187&codigo_libro=4146. ISBN 9788448156190.

- Banzí, Massimo. Getting started with Arduino [on line]. 4th ed. Sebastopol (CA): Make Community, 2022 [Consultation: 18/06/2024]. Available on:

<https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?pq-origsite=primo&docID=6888447>. ISBN 9781680456899.

Complementary:

- Wakerly, John F. Diseño digital: principios y prácticas. 3a ed. México: Pearson Educación, 2001. ISBN 9789702607205.

- Margolis, Michael. Arduino cookbook [on line]. 2nd ed. Beijing, China: O' Reilly, 2011 [Consultation: 10/06/2022]. Available on: <https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?pq-origsite=primo&docID=827264>. ISBN 1449321186.