Course guide
820227 - IEEIA - Electronic Instrumentation

Last modified: 22/06/2026

Unit in charge: Barcelona East School of Engineering
Teaching unit: 710 - EEL - Department of Electronic Engineering.

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

Academic year: 2026 **ECTS Credits:** 6.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: FRANCISCO JOSÉ CASELLAS BENEYTO

Others:

Primer quadrimestre:
FRANCISCO JOSÉ CASELLAS BENEYTO - Grup: T13, Grup: T14
OLIVER MILLÁN BLASCO - Grup: T16
IGNACIO MORAGUES RODRÍGUEZ - Grup: T11, Grup: T12
FRANCESC XAVIER ROSET JUAN - Grup: T11, Grup: T12, Grup: T13, Grup: T14, Grup: T15, Grup: T16

Segon quadrimestre:
FRANCISCO JOSÉ CASELLAS BENEYTO - Grup: M11, Grup: M12, Grup: M13, Grup: M14, Grup: M15, Grup: M16, Grup: M17, Grup: M18
LUIS LAGUNA ESTAÚN - Grup: M11, Grup: M12
IRINA SELIN LORENZO - Grup: M13, Grup: M14, Grup: M15, Grup: M16, Grup: M17, Grup: M18

REQUIREMENTS

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. Understand the applications of electronic instrumentation.

Transversal:
2. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.

TEACHING METHODOLOGY

LEARNING OBJECTIVES OF THE SUBJECT

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STUDY LOAD

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

Total learning time: 150 h

CONTENTS

1. Introduction to the subject of electronic instrumentation.

Description:
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Specific objectives:
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Related activities:
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Full-or-part-time: 1h
Theory classes: 1h

2. Measures and analysis of basic signals.

Description:
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Specific objectives:
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Related activities:
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Full-or-part-time: 7h
Theory classes: 3h
Self study : 4h

3. Basic instruments.

Description:
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Specific objectives:
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Related activities:
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Full-or-part-time: 86h
Theory classes: 21h
Laboratory classes: 9h
Self study : 56h

4. Measurement systems.

Description:
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Specific objectives:
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Related activities:
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Full-or-part-time: 56h
Theory classes: 20h
Laboratory classes: 6h
Self study : 30h

GRADING SYSTEM

Any academic fraud, plagiarism or use or possession of unauthorised means in an assessment activity leads to a mark of zero (0) for the affected test or assignment. Furthermore, in accordance with the University's regulations, if disciplinary proceedings are initiated the subject is recorded as "Pending Assessment" until a decision is reached. These incidents are managed in accordance with the **Action Framework for Academic Integrity in Assessment at the UPC**.

BIBLIOGRAPHY

Basic:
- Pallás Areny, Ramón. Instruments electrònics bàsics. Barcelona: Marcombo, DL 2008. ISBN 9788426714848.
- Pérez García, Miguel Ángel. Instrumentación electrónica. 1ª ed. Madrid: Paraninfo, 2014. ISBN 9788428337021.

Complementary:
- Manuel Lázaro, Antonio [et al.]. Problemas resueltos de instrumentación y medidas electrónicas. Madrid: Paraninfo, 1994. ISBN 8428321418.
- Pallás Areny, Ramón; Casas, Òscar; Bragós Bardia, Ramon. Sensores y acondicionadores de señal : problemas resueltos. Barcelona: Marcombo, cop. 2008. ISBN 9788426714947.
- Wolf, Stanley; Smith, Richard F. M. Student reference manual for electronic instrumentation laboratories. 2nd ed. Upper Saddle River: Pearson Education, cop. 2004. ISBN 0130421820.
- Pallàs Areny, Ramon. Sensores y acondicionadores de señal. 4a ed. Barcelona [etc.]: Marcombo Boixareu, cop. 2003. ISBN 8426713440.
- Pallàs Areny, Ramon. Adquisición y distribución de señales. [Reimpr.]. Barcelona: Marcombo, DL 2008. ISBN 9788426709189.

RESOURCES

Other resources: