



# Course guide

## 820227 - IEEIA - Electronic Instrumentation

Last modified: 08/07/2024

**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:** 2024    **ECTS Credits:** 6.0    **Languages:** Catalan, Spanish

### LECTURER

**Coordinating lecturer:** FRANCISCO CASELLAS BENEYTO

**Others:** FRANCISCO CASELLAS BENEYTO  
XAVIER ROSET JUAN  
IGNACIO MORAGUES RODRÍGUEZ

### 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

### 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:**

- .

**Specific objectives:**

- .

**Related activities:**

- .

**Full-or-part-time:** 1h

Theory classes: 1h

### 2. Measures and analysis of basic signals.

**Description:**

- .

**Specific objectives:**

- .

**Related activities:**

- .

**Full-or-part-time:** 9h

Theory classes: 3h

Laboratory classes: 2h

Self study : 4h

### 3. Basic instruments.

**Description:**

- .

**Specific objectives:**

- .

**Related activities:**

- .

**Full-or-part-time:** 85h

Theory classes: 21h

Laboratory classes: 8h

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:** 54h

Theory classes: 20h

Laboratory classes: 4h

Self study : 30h

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## GRADING SYSTEM

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## BIBLIOGRAPHY

**Basic:**

- Pallàs 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.
- Pallàs 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.

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## RESOURCES

**Other resources:**