

ELECTRONIC INSTRUMENTATIONS

1.1. Identification

University:	Universidad Politécnica de Valencia										
School:	Escuela Técnica Superior de Ingeniería del Diseño										
Course:	ELECTRONIC INSTRUMENTATIONS										
ECTS:	6										
Semester:	<i>Winter</i>					<i>Summer</i>				X	
Category	<i>Fundamental course</i>				X	<i>Specialisation course</i>					
Module	<i>MFI</i>		<i>MFII</i>		<i>MFIII</i>	X	<i>MSI</i>		<i>MSII</i>		<i>MSIII</i>
Teachers:	Jose Pelegrí										
Language:	<i>English</i>	X	<i>Italian</i>		<i>Swedish</i>		<i>Spanish</i>				X

1.2. Learning-outcomes

- Knowledge about the fundamentals of instrumentations and measurements electronics.

1.3. Competencies

▪ General

- to have critical understanding of technical and scientific tools
- to work and manage teams
- communication skills (both written and oral)
- to work in an international context

▪ Specific

- To identify the blocks of an equipment of electronic instrumentation according to the application that is going to make.
- To design each one of the stages. To apply the corresponding formulas and to make the necessary calculations.
- To choose the suitable components
- To verify the suitable operation of the measurement systems.
- To calibrate measuring equipment

1.4. Contents

Conditioning systems of electrical signal: measure bridges, signal amplifiers, instrument amplifiers, active filters, acquisition of signals, A/D and D/A converters.

1.5. Teaching Methodology

- Lecture sessions
- Practical sessions: “cooperative work” for solving problems
- laboratory sessions

1.6. Evaluation

- written exams
- oral evaluation of the problems solved by “cooperative work”
- oral evaluation of laboratory work

1.7. Bibliography

- A. P. Malvino. “Electronic instrumentation fundamentals”. McGraw-Hill
- K. B. Klaassen, “Electronic measurement and instrumentation”. Cambridge University Press, 1996.
- P. P. Regtien. “Instrumentation electronics” Prentice Hall, 1992