

School of Industrial Engineering and Telecommunications

# SUBJECT TEACHING GUIDE

## G699 - Automatic Control Systems

## Degree in Industrial Technologies Engineering

## Academic year 2023-2024

1. IDENTIFYING DATA									
Degree	Degree in Industrial Technologies Engineering			Type and Year	Compulsory. Year 2				
Faculty	School of Industrial Engineering and Telecommunications								
Discipline	Subject Area: Electronics and Automation Module in Common with the Industrial Branch								
Course unit title and code	G699 - Automatic Control Systems								
Number of ECTS credits allocated	6	Term Semeste		r based (2)					
Web									
Language of instruction	Spanish	English Friendly	Yes	Mode of o	delivery	Face-to-face			

Department	DPTO. TECNOLOGIA ELECTRONICA E INGENIERIA DE SISTEMAS Y AUTOMATICA
Name of lecturer	JOSE RAMON LLATA GARCIA
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Other lecturers	ALBERTO RIVERO ALARIO

### **3.1 LEARNING OUTCOMES**

- Knowledge of automation technologies and their fields of application.

Knowledge of the techniques of representation of dynamic systems.

Capacity Dynamic Analysis Time-continuous systems in the time and frequency and capacity Controllers Design Time-Continuous Dynamical Systems in Time domain



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#### 4. OBJECTIVES

Knowledge of automation technologies and their fields of application. Knowledge of the techniques of representation of dynamic systems. Capacity for Analysis of Dynamic continuous-time systems in the time and frequency frequency domains and capacity to Design continuous-time controllers for Dynamical Systems in Time domain

### 6. COURSE ORGANIZATION

CONTENTS					
1	AUTOMATION: Introduction to methods and techniques of industrial control				
2	BASIC CONTROL: Analysis of Continuous Time Systems in time domain.				
3	BASIC CONTROL: Frequency Analisys for Continuous Time Systems				
4	AUTOMATION: Industrial Automation, definition, types and classification, Technology and examples.				
5	BASIC CONTROL: Introduction and representation of feedback continuous-time control systems				

7. ASSESSMENT METHODS AND CRITERIA								
Description	Туре	Final Eval.	Reassessn	%				
Continuous Assessment	Others	No	Yes	20,00				
Continuous Assessment	Written exam	No	Yes	60,00				
Continuous Assessment	Work	No	Yes	20,00				
Students who have not completed the continuous assessment will take a written exam in which all the contents seen in the subject will be evaluated and the weight of this exam will be 100% of the grade.	Written exam	Yes	No	0,00				
TOTAL 1								
Observations								
Students who fail the course for continuous evaluation can go to a final written exam in the June session. To pass this test will be overcome with a minimum of 5.								

In the extraordinary call: they can go to a final written exam in the June session. To pass this test will be overcome with a minimum of 5.

Remote evaluation, of these same exams, is planned in the case of a new health alert by COVID-19 making it impossible to conduct the evaluation in person.

Observations for part-time students

There will be a written exam (60%) and a practical exam (40%) at the Laboratory and will need to obtain a minimum score of 5 out of 10 in both.

Remote evaluation, of these same exams, is planned in the case of a new health alert by COVID-19 making it impossible to conduct the evaluation in person.



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#### 8. BIBLIOGRAPHY AND TEACHING MATERIALS

#### BASIC

Ogata, Katsuhiko. Ingeniería de control moderna / Katsuhiko Ogata 4 Ed. 2003 en adelante.

Hostetter, Gene H. Sistemas de control / Gene H. Hostetter, Clement J. Savant, Raymond T.. 1990 en adelante.

Franklin, Gene F. Feedback control of dynamic systems / Gene F. Franklin, J. David Powel, Abbas Emani-Naeini. 1994 en adelante

Automatismos Industriales. José A.Barbado Santana, J. Martin Sierra, J. Aparicio Bravo. Creaciones Copyright. 2011 en adelante

Control Automático con Herramientas Interactivas. Jose Luis Guzmán. Ramon Costa, Manuel Berenguel. Sebastian Dormido. Pearson. Uned Editorial.

Automatismos Eléctricos e Industriales. J.L. Duran, H. Martinez, J. Gámiz. J. Domingo. A. Grau. Altamar S.A., Marcombo. 2011. ISBN: 978-84-26715-63-0