

GUÍA DOCENTE ABREVIADA DE LA ASIGNATURA

G1895 - Energy and Telecommunications

Grado en Ingeniería de Tecnologías de Telecomunicación

Curso Académico 2024-2025

1. DATOS IDENTIFICATIVOS					
Título/s	Grado en Ingeniería de Tecnologías de Telecomunicación			Tipología y Curso	Obligatoria. Curso 3
Centro	Escuela Técnica Superior de Ingenieros Industriales y de Telecomunicación				
Módulo / materia	MATERIA ENERGIA Y TELECOMUNICACIONES MÓDULO COMÚN A LA RAMA DE TELECOMUNICACIÓN				
Código y denominación	G1895 - Energy and Telecommunications				
Créditos ECTS	6	Cuatrimestre	Cuatrimestral (2)		
Web	https://aulavirtual.unican.es/				
Idioma de impartición	Inglés	English friendly	No	Forma de impartición	Presencial

Departamento	DPTO. INGENIERIA ELECTRICA Y ENERGETICA				
Profesor responsable	MARIO MAÑANA CANTELI				
E-mail	mario.manana@unican.es				
Número despacho	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 2. DESPACHO PROFESOR (S2055)				
Otros profesores	JESUS MARIA MIRAPEIX SERRANO SERGIO ORTEGA ALBA				

3.1 RESULTADOS DE APRENDIZAJE
- Ability to design and dimension the power supply infrastructure required for the operation of Telecommunication systems
- Ability to project generation, distribution and storage infrastructures for electric energy, both classic design and new approaches based on advanced renewable sources such as photovoltaic solar and wind power.
- Gain a basic knowledge of solar systems applications and fundamentals of domestic and industrial design based on these technologies.
- Ability to design basic low voltage infrastructures in accordance to REBT (Reglamento Electrotécnico de Baja Tensión)

4. OBJETIVOS

Show an introductory overview of generation, transport and distribution of electrical energy from the point of view of both devices and system and the Spanish Regulation Framework in the context of the 2030 Agenda for Sustainable Development and the SDG 7 from United Nations.

The student will have basic knowledge of the use of energy sources for the supply of electronic systems. After that, the student will be able to choose and operate, under basic electrotechnics criteria, telecommunications power systems, with special focus on power supplies and batteries.

The student will have a basic knowledge of renewable power sources, focusing on solar and wind power and their integration methods.

6. ORGANIZACIÓN DOCENTE

CONTENIDOS

1	Introduction to power systems and renewable Energies
2	Sinusoidal ac circuits
3	Magnetic Circuits and Electrical Machines
4	Electrical Infrastructures, REBT and ITCs
5	Introduction to Power Electronics
6	Renewable Energies and Storage Solutions

7. MÉTODOS DE LA EVALUACIÓN				
Descripción	Tipología	Eval. Final	Recuper.	%
Continuous Assessment	Actividad de evaluación con soporte virtual	No	No	10,00
Evaluation Part I	Examen escrito	No	Sí	30,00
Evaluation Part II	Examen escrito	No	Sí	30,00
Evaluation Part III	Examen escrito	No	Sí	30,00
TOTAL				100,00
Observaciones				
<p>In general, the rules governing the evaluation system module will be in accordance with the current legislation in the University of Cantabria. The evaluation system will have as main benchmark the continuous assessment . It will be performed through activities planned throughout during the semester .</p> <p>Continuous assessment may be supplemented by a final test to be held at the end of the semester. In any case, the percentages corresponding to the continuous assessment and the final grade test shall comply with the following restrictions:</p> <ul style="list-style-type: none"> • Continuous assessment based on LMS: 10% of the final score. • Continuous assessment based on written exams: 90% of the final score. <p>Students who refuse to do the continuous evaluation or fail the final exam will be required to re-sit the exam period at the end of each semester.</p> <p>For reference, the ongoing evaluation activities may consist of:</p> <ul style="list-style-type: none"> • Laboratory activities. • Oral presentations. • Individual or group work. • Written tests. <p>At the discretion of the faculty, all the evaluation activities can be carried out in both face to face or online mode.</p>				
Criterios de evaluación para estudiantes a tiempo parcial				
The evaluation of partial-time students will be performed with the same criteria that the full-time students.				

8. BIBLIOGRAFÍA Y MATERIALES DIDÁCTICOS
BÁSICA
Mañana, M and Mirapeix, J.M.; Class notes.
Hart, D. Power Electronics. McGraw-Hill. 2010 IND Básica E12A 21f
Reglamento Electrotécnico de Baja Tensión. (Spanish Regulations)

Esta es la Guía Docente abreviada de la asignatura. Tienes también publicada en la Web la información más detallada de la asignatura en la Guía Docente Completa.