

GUÍA DOCENTE ABREVIADA DE LA ASIGNATURA

G1778 - Experimental Optics

Doble Grado en Física y Matemáticas

Grado en Física

Grado en Física

Curso Académico 2024-2025

1. DATOS IDENTIFICATIVOS				
Título/s	Doble Grado en Física y Matemáticas Grado en Física Grado en Física		Tipología y Curso	Obligatoria. Curso 3 Obligatoria. Curso 3
Centro	Facultad de Ciencias			
Módulo / materia	MATERIA LABORATORIOS DE FÍSICA MÓDULO CENTRAL			
Código y denominación	G1778 - Experimental Optics			
Créditos ECTS	6	Cuatrimestre	Cuatrimestral (2)	
Web				
Idioma de impartición	Inglés	Forma de impartición	Presencial	

Departamento	DPTO. FISICA APLICADA
Profesor responsable	PABLO ALBELLA ECHAVE
E-mail	pablo.albella@unican.es
Número despacho	Facultad de Ciencias. Planta: + 3. INVESTIGADOR P. RAMON Y CAJAL (3028)
Otros profesores	FERNANDO MORENO GRACIA JOSE MARIA SAIZ VEGA ANA QUIRCE TEJA YAEL GUTIERREZ VELA

3.1 RESULTADOS DE APRENDIZAJE

- Ability to work in the lab as part of a group, developing tasks that are either individual or groupal.
- Ability to carry out experiments involving light generation, free and guided propagation, detection and measurement.
- Experimental verification of some of the most important phenomena in optics, including the fundamental laws of propagation, dispersion, polarization, interference and diffraction.
- Familiarity with data interpretation according to theory and error handling with scientific criteria.
- Development of oral, and written, communication skills for the description of experimental results.

4. OBJETIVOS

- Apply the scientific method, critical thinking and experimental rigor.
- Understand a fundamental set of phenomena and experimental displays, as well as their main implications in the field of applied optics.
- Know how to behave safely and easily in an optics lab, either individually or in group.
- Know how to process and analyze the experimental data in a correct way. The student should be able to discuss the results and contrast them with the theoretical models or expected values.
- Know how to prepare reports and oral presentations to present his work and results to others.

6. ORGANIZACIÓN DOCENTE

CONTENIDOS

1	<p>-Basic instrumental optics.</p> <p>Optical experiments related to: Transverse polarization of electromagnetic waves (generation and analysis), Radiometry Laws, Light dispersion, Color filter characterization, digital image processing.</p> <p>Theory and fundamentals: Classroom sessions for introductory purposes, Experimental displays shown and explained by the teacher, seminars presented by students.</p>
2	<p>Physical Optics. Optical experiments related to: Time and space coherence, Interference with two and multiple beams, Diffraction by apertures and gratings, and Digital image. Experiments with optical fibers and lasers.</p> <p>Theory and fundamentals: Classroom sessions for introductory purposes, Experimental displays shown and explained by the teacher, seminars presented by students.</p>

7. MÉTODOS DE LA EVALUACIÓN				
Descripción	Tipología	Eval. Final	Recuper.	%
Reports	Trabajo	No	Sí	20,00
Seminar	Examen oral	No	No	10,00
Laboratory work	Evaluación en laboratorio	No	No	35,00
Test after demonstrative sessions	Examen escrito	No	Sí	10,00
Exam	Examen escrito	Sí	Sí	25,00
TOTAL				100,00
Observaciones				
-Realization of the experiments and attendance to demonstrative sessions is mandatory. -As a general criterion, all materials presented after the deadline will be assessed with a grade of 0 (zero), unless authorized by the responsible of the course.				
Criterios de evaluación para estudiantes a tiempo parcial				
Part-time student should inform the person responsible of the course at the beginning of the term				

8. BIBLIOGRAFÍA Y MATERIALES DIDÁCTICOS
BÁSICA
Guides of the experiments as provided to the students.
E. Hecht, OPTICS, Addison-Wesley Ed

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.