

GUÍA DOCENTE ABREVIADA DE LA ASIGNATURA

G1775 - Advanced Experimental Techniques (2C)

Grado en Física

Curso Académico 2017-2018

1. DATOS IDENTIFICATIVOS			
Título/s	Grado en Física		Tipología y Curso
Centro	Facultad de Ciencias		
Módulo / materia	MATERIA TÉCNICAS EXPERIMENTALES AVANZADAS MÓDULO TRANSVERSAL FÍSICA FUNDAMENTAL / FÍSICA APLICADA		
Código y denominación	G1775 - Advanced Experimental Techniques (2C)		
Créditos ECTS	6	Cuatrimestre	Cuatrimestral (2)
Web			
Idioma de impartición	Inglés	Forma de impartición	Presencial

Departamento	DPTO. FISICA APLICADA
Profesor responsable	FRANCISCO GONZALEZ FERNANDEZ
E-mail	francisco.gonzalezf@unican.es
Número despacho	Facultad de Ciencias. Planta: + 3. DESPACHO (3043)
Otros profesores	ANGEL MAÑANES PEREZ LUIS PESQUERA GONZALEZ MANUEL PEREZ CAGIGAL ANGEL ALBERTO VALLE GUTIERREZ JOSE IGNACIO ESPESO MARTINEZ ANGELA INMACULADA BARREDA GOMEZ

3.1 RESULTADOS DE APRENDIZAJE

- Use of advanced experimental setups and knowledge in instrumentation control.
- Knowledge of basic elements of different experimental devices , their physical principles and applications.
- Being able to choose the proper experimental technique to unveil the physics of a given experimental problem.
- Knowing to properly analyse and discuss the experimental data. Being able to fit these experimental data by using existing software or by developing new one. Being accurate in data discussion and, if possible, comparing these data with already known results.
- Development of technical accounts in English, in order to integrate them into the scientific report of an experiment.
- Being able to carry out an oral presentation in English, over a fixed limited time, of one of the experimental projects.

4. OBJETIVOS

- The main goal of the subject is that the student will lead four different projects (from different topics in Physics) at an advanced level.
- It is expected that the student will get lab skills, will know material with general and specific purposes and will deepen into the experimental data treatment (data acquisition, graphical representation, fit to theoretical models, etc.).
- It is advisable that the student will arrive to properly manage as a speaker when presenting, in English, one of the led projects.

6. ORGANIZACIÓN DOCENTE

CONTENIDOS

1	To carry out one of the following experimental projects: - Analysis of a Luminous Signal with Deterministic Profile by using Photon Counting Techniques (Project 1). - Shack-Hartmann Wavefront Sensor (Project 2). - Ferromagnetic materials characterization (hysteresis loops) (Project 3). - Neutron detection. Measure of the Thermal Neutron Flux of an Am-Be Neutron Source (Project 4)
2	To carry out one of the following experimental projects: - Shack-Hartmann Wavefront Sensor (Project 2). - Ferromagnetic materials characterization (hysteresis loops) (Project 3). - Neutron detection. Measure of the Thermal Neutron Flux of an Am-Be Neutron Source (Project 4). - Advanced characterization of semiconductor lasers (Project 5)
3	To carry out one of the following experimental projects: - Ferromagnetic materials characterization (hysteresis loops) (Project 3). - Neutron detection. Measure of the Thermal Neutron Flux of an Am-Be Neutron Source (Project 4). - Advanced characterization of semiconductor lasers (Project 5). - Analysis of a Luminous Signal with Deterministic Profile by Using Photon Counting Techniques (Project 1)
4	To carry out one of the following experimental projects: - Analysis of a Luminous Signal with Deterministic Profile by Using Photon Counting Techniques (Project 1). - Shack-Hartmann Wavefront Sensor (Project 2). - Ferromagnetic materials characterization (hysteresis loops) (Project 3). - Advanced characterization of semiconductor lasers (Project 5)

7. MÉTODOS DE LA EVALUACIÓN

Descripción	Tipología	Eval. Final	Recuper.	%
Continuous Evaluation	Otros	No	Sí	100,00
TOTAL				100,00
Observaciones				
<p>METHODOLOGY</p> <ul style="list-style-type: none"> - The students will be divided into several groups that will be organized at the beginning of the semester. - Each student will carry out four projects selected by the encharged person of the subject. - The student will have to write down a report, in English, of any of the finished projects. The report will be delivered to the corresponding teacher. - Each student will perform a public oral presentation on a particular project that will be selected by the responsible of the subject. <p>EVALUATION</p> <ul style="list-style-type: none"> - The deadline for each report will be one week from the end of the last session of the corresponding project. There will be a penalty of 1 over 10 points for delays up to one week, 3 over 10 points for delays up to 2 weeks and a further delay will involve a mark of 0 on that project, although it will still be compulsory to submit the report. - The oral presentation will be compulsory for all the students. - It will be compulsory to submit the reports on the four projects to pass the subject. - The project including the oral presentation will weight 34% on the final mark. - The rest of the projects will weight 22%, each one, on the final mark. <p>RE-EVALUATION</p> <ul style="list-style-type: none"> -To access the resit, the student has to complete the missing experiments to the expected number (4) under the conditions set by the teacher responsible for the projects. Then, the student has to pass a written test to be performed on schedule by the Center resit 				
Observaciones para alumnos a tiempo parcial				
As far as possible, we will try to adapt schedules so that students can carry out the four experimental projects.				

8. BIBLIOGRAFÍA Y MATERIALES DIDÁCTICOS

BÁSICA

- Due to the specific characteristics of the present subject, the basic bibliography will be contained in the guide of each project that will be provided at the beginning of the course.

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.