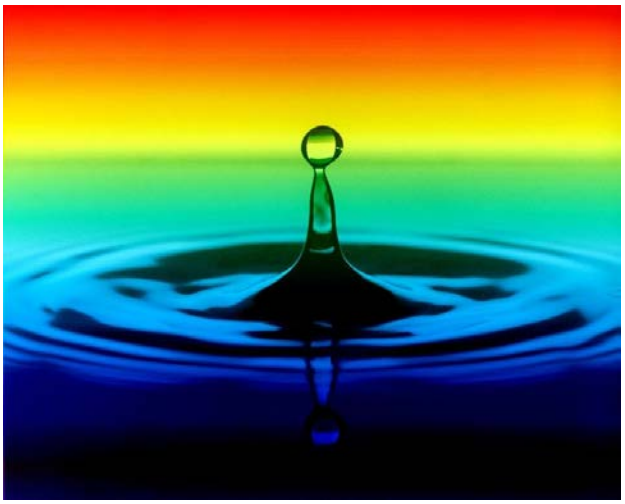
Universidad Politécnica de Cartagena | Campus de Excelencia Internacional

SCIENTIFIC PHOTOGRAPHY



Transversal Activitiy of Doctorate
Universidad Politécnica de Cartagena
Curso 2020/21

1. Información general de la actividad /General course information					
Nombre/ Name	Scientific Photography				
Nivel /Level	Doctorate				
Modaliad de impartición / Teaching mode	On line				
Lengua impartición/ Language	English				
ECTS	1	**hours / ECTS**	30	**Total hours**	30

2.Datos del profesorado / Lecture data			
Profesor /Lecturer in charge	Francisco Cavas Martínez		
Departamento o Servicio/ Department/Service	Department of Structures, Construction and Graphical Expression		
Area de conocimiento /Knowledge area	Graphic Expression in Engineering		
Despacho /Office location	Building of Industrial Engineering, 3º floor		
Teléfono /Telephone	968 338856	**email**	Francisco.cavas@upct.es
URL / WEB	https://personas.upct.es/perfil/francisco.cavas		
Horario de Atención /Office hours	Tuesday 9.00H – 12.00H am		

3. Fechas por edición / Dates

Edition	Academic year 2020-2021
Fecha/Date	Open all academic year. On line
Horario/Hours	30

4. Objetivos del curso/Course objectives

Scientific photography, also called applied photography, is a group of photographic specialties aimed at obtaining valuable information in the form of images for research or process control, in all branches of science, industry and education. What is it?

- The development of Science and Technology is fundamentally based on the performance of visual observations.
- Surprisingly there is hardly any information, books, websites orcourses dedicated to scientific photography, with which researchers hardly have information about existing materials and techniques.
- The number of branches is such that it is difficult to master all of them. It is not a specialty, but a set of techniques.

The scientific photography major offers an immersive and flexible asignature that prepares students for a wide variety of scientific challenge spanning the broad fields of science, technology, and medicine. The goal of this course is to get acquainted with the photography is used to advance science, and imaging is used to collect scientific data.

5. Contenidos teóricos / Theory programme

1. Introduction. Formal elements. Visual elements. Aperture and shutter speed.
2. Perspective. Properties of the light. Light sources. Color and image Overview of sets.
3. High speed photography. Photography of weak light objects. Infrared Photography Ultraviolet photography.
4. Photography underwater.
5. Practical cases.

6. Contenidos prácticos / Practical programme

We will apply the theoretical concepts in the following case studies:

1. Effects High key and low key.
2. Effects of water drops.
3. Smoke effects.
4. Extreme backlight effects with the sun.
5. Bokeh effects with lights.
6. Silk effect.
7. Make a series. Depth of field
8. Photograph the same scenario at different times of the day.

7. Sistema de evaluación/ Sistem of evaluation

The final evaluation will be based on the delivery of a final work comprising several scientific photographs related to the doctoral student's research.

8. Distribución horaria de los contenidos, incluyendo las tareas de los Alumnos / Hours distribution

Activity	Location	Student work Hours	Hours
Theory programme	Virtual	Attend Virtual class	7
		Homework: study of the theory contents	7
Practice	Virtual	Attend Virtual Practice	3
		Homework: practical problems resolution	10
Tutoring	Virtual	Virtual ….	3
			30