

## GENERAL INFORMATION AND REGISTRATION

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For any general information regarding registration, legalisation of documents, foreign students, scholarships, insurance and issuance of degree certificates it is convenient to contact with the Continuing Education Centre (CEC-UA: <http://web.ua.es/en/continua/continuous.html>).

### Pre-registration and fees:

Anyone interested in registering should complete a pre-registration form before 30th June 2016. This form is available from the course Secretary and must be handed in with a photocopy of the student's National Identity card or passport, as well as any academic transcripts and degree certificate/s. During the first half of July 2016, the Head of Studies will publish the list of admissions, which will be formalized once payment of the course deposit fee (€420, equating to 10% of the total course fee) has been confirmed in the CEDIP's Sabadell Bank account. This payment constitutes part of the first installment of the fee and will be deducted from the first installment in September.

Generally, those accepted onto the course will be required to pay course fees to the CEC-UA in three installments, the first in half of September 2016 (50%), the second in November 2016 (25%) and the final installment in January 2017 (25%).

### Management and coordination:

Prof. Dr. Francisco Miguel Martínez Verdú,  
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### Studies Coordinator:

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Department of Optics  
University of Granada



Sensors, Instrumentation and  
Systems Development Center –  
Technical University of Catalonia

AUDI  
RENAULT  
VOLVO  
GRUPO ANTOLÍN

Institute of Optics – High Council  
of Scientific Research (CSIC)

(logos constantly updated)

Universitat d'Alacant  
Universidad de Alicante



**MASTER in COLOR TECHNOLOGY**  
for the **AUTOMOTIVE SECTOR**

UNIVERSITY OF ALICANTE

Color Technology:  
study of theories and techniques  
used to design, manufacture  
and measure colored objects

Academic year 2016-17

Universidad de Alicante Fundación General  
Escola de Negocis  
Escuela de Negocios

UA UNIVERSITAT D'ALACANT  
Color and Vision Group  
Department of Optics, Pharmacology and Anatomy  
Faculty of Science

# Master's Degree in Color Technology for the Automotive Sector

## A PROFESSIONAL PROFILE WITH A FUTURE

Color Technology focuses on the study of theories and techniques related to the design, manufacture and measurement of colored materials. A wide range of different industrial sectors are involved in color technology (colorants, coatings, textiles, ceramics, plastics, printing, multimedia, etc.). Unfortunately, in many cases, color experts within these sectors have not received any specific training in color science. Therefore, their knowledge about colors, which is critical to developing their work, has been obtained through practical, possibly self-taught, experience.

For this reason, companies involved in these productive sectors often invest considerable resources in specific color training to improve their employees' skills. In the same way, the limited number of graduates who do have advanced color training are highly sought after by many companies.

Over recent decades, color measurement and color quality control of gonio-apparent materials have become key areas for the automotive industry and also for other sectors such as cosmetics, coatings, plastics, printing, textiles, architecture, etc. Therefore, it is necessary to count on in-depth knowledge of complex instrumentation techniques and visual evaluation procedures as regards differences in color and texture (sparkle and graininess); and even color formulation with solid and special effect pigments.

In response to this socioeconomic demand, the Color and Vision Group of the Department of Optics, Pharmacology and Anatomy at the University of Alicante, in collaboration with other academic institutions (UGR, UPC, and CSIC) and different companies (AUDI, SEAT, BASF Coatings, BYK-Gardner, Mercedes Benz, Opel, Toyota Motor Europe, PPG, Merck, Valspar, Plastic Omnium, Nubiola-Ferro, etc), is offering the Master's Degree in Color Technology for the Automotive Sector (acronym: CoLTAS) as a postgraduate course with 60 ECTS or credits.

## A DEFINED OBJECTIVE

The purpose of the CoLTAS Master is to provide comprehensive training in the multidisciplinary study of Color Science and Technology from a global perspective. Students will examine the physicochemical and visual laws and solve real or simulated problems that often arise when using special effect pigments in different industrial sectors, particularly within the automotive sector.

This course includes an industry-based internship of up to 300 hours and provides a great opportunity to achieve basic and

advanced color control skills at an industrial level, particularly in the automotive sector, but also in other industries using special-effect pigments as cosmetics, plastics, inks, etc.

For color experts with, or not, a university degree, this new postgraduate course is a great chance to enhance training and professional qualifications. Meanwhile, recent graduates, even undergraduates as it will be shown below, who choose to undertake this specialist postgraduate course will find it easier to obtain highly specialized jobs, which are therefore more highly valued (and better paid).

## SYLLABUS

For undergraduate students (with less than 18 ECTS for finishing her/his graduate) and/or professionals without University degree, the CoLTAS Master enables to obtain two sub-degrees (Expert = 20 ECTS + Specialist = 30 ECTS) before obtaining the final MSc degree, even in different academic years.

DEGREE DISTRIBUTION	SEMESTER	SUBJECT	ECTS
Expert in Color Science	1	Basic Colorimetry	6
	1	Colour Perception	6
	1	Colour Physics and Chemistry	6
	1	Bibliographic Resources	2
Specialist in Color Engineering for the Automotive Sector	1	Advanced Colorimetry	4
	1	Visual Appearance	6
	1	Visual Harmony Management	5
	1	Coatings and Plastics	3
	1	Colour Reproduction	7
	2	Internships I	5
MSc in Color Technology for the Automotive Sector	2	Internships II	4
	2	MSc Thesis	6

## TEACHING STRATEGY

Blended learning methodology (b-learning) using the Moodle platform (<http://si.ua.es/moodle>), with individual and collective learning activities, with a weekly continuous and effective communication and tutoring between student and professor.

However, taking into account the applied profile of this Master, when the first semester will be finishing, and before starting the internships, there will be an intensive period of mandatory laboratory practices and invited technical conferences (workshop).

## EVALUATION METHOD

Classroom attendance is not mandatory, except the mandatory attendance for laboratory sessions and workshop finishing the first semester. But the virtual learning activities will be diverse and demanding. These activities will be evaluated to guarantee the assimilation of general, transversal, cognitive and procedural skills. If students do not fulfill the established requirements, they will simply receive a certificate of attendance.

The Master's thesis will involve drawing up, presenting and defending a report on the activities undertaken during the industrial internship (car manufacturers, coatings and plastic suppliers, etc.) or at a research institution.

## ENTRY REQUIREMENTS

Spanish or foreign graduates in chemistry, physics, material engineering, industrial engineering, computer engineering, multimedia, architecture or psychology, etc. B1 in English. But, obviously, it is possible to access to this Master as undergraduate student, or professional without University degree, provided that the "Expert" + "Specialist" combination is done, even though in different academic years.

## COURSE INFORMATION

**Number of hours:** 1500 (60 ECTS)

### Type and duration:

Semester 1 (Blended learning from September to January)

Semester 2 (Industrial internship from February to June; Master's Thesis in June)

**Registration fee:** €4200 to be paid by installments (corporate registration available) for MSc degree; €1610 for the Expert degree; and €2415 for the Specialist degree.

**Qualification awarded:** Expert in Color Science, Specialist in Color Engineering for the Automotive Sector, and Master's Degree in Color Technology for the Automotive Sector, signed by the University of Alicante President.