



Guía docente 32075 - CTECH - Tecnología del Color

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Unidad responsable: Escuela Técnica Superior de Ingeniería de Telecomunicación de Barcelona
Unidad que imparte: 731 - OO - Departamento de Óptica y Optometría.

Titulación: DOCTORADO EN FOTÓNICA (Plan 2007). (Asignatura optativa).
MÁSTER UNIVERSITARIO EN FOTÓNICA (Plan 2009). (Asignatura optativa).
MÁSTER UNIVERSITARIO ERASMUS MUNDUS EN INGENIERÍA FOTÓNICA, NANOFOTÓNICA Y BIOFOTÓNICA (Plan 2010). (Asignatura optativa).

Curso: 2015 **Créditos ECTS:** 2.5 **Idiomas:** Inglés

PROFESORADO

Profesorado responsable: Meritxell Vilaseca

Otros: Jaume Pujol

METODOLOGÍAS DOCENTES

Presencial Teaching + activities

OBJETIVOS DE APRENDIZAJE DE LA ASIGNATURA

Nowadays Color Science is an integral component of nearly every industry manufacturing colored products: printing, desktop publishing, electronic imaging, digital photography, textile, paints, plastics etc. Recent advances in colorimetry and color technology have been caused by the new developments appeared in this digital age. Color Imaging has evolved from the classical broadband description to a spectral representation. The course focuses on the main topics of the colorimetry, color imaging and color technology. It starts with the study of specification, measurement and reproduction of color. The problem of measuring color quality using color difference formulas is also covered, showing the latest developments. Digital technologies for capture and delivery of color are introduced together with Color Management Systems, the modern solution of a complete color reproduction system. Finally the techniques and developments to obtain spectral images are presented. Numerous examples and applications are described.

CONTENIDOS

(CAST) Color Specification

(CAST) Color Measurement

(CAST) Future trends and applications

(CAST) Color reproduction

(CAST) Digital color imaging systems



(CAST) Color management systems

(CAST) Multispectral Imaging

(CAST) Future trends and applications

SISTEMA DE CALIFICACIÓN

The evaluation procedure of the course will include the following items to compute the final mark:- Attendance (20%)- Deliverables (40%): Deliverables that will be proposed along the course (Resolution of problems, calculations of some of the presented topics etc.)- Presentation of a paper (40%): Short presentation of an original journal paper proposed by the teacher at the end of the course.

NORMAS PARA LA REALIZACIÓN DE LAS PRUEBAS.

The usual in University teaching

BIBLIOGRAFÍA

Básica:

- Artigas, J.M.; Capilla, P.; Pujol, J. (coords.). Tecnología del color. València: Universitat de València, 2002. ISBN 8437054362.
- Kang, H.R. Computational color technology. Bellingham: Spie Press, 2006. ISBN 0819461199.
- Green, P. Understanding digital color. 2nd ed. GATF Press, 1999. ISBN 0883622335.
- Berns, R.S. Billmeyer and Saltzman's Principles of color technology. 3rd ed. New york, [etc.]: John Wiley and Sons, 2000. ISBN 047119459X.
- Field, G.G. Color and its reproduction: fundamentals for the digital imaging and printing industry. 3rd ed. Pittsburgh: Graphics Arts Technical Foundation, 2004. ISBN 0883624079.
- Capilla, P.; Artigas, J.M.; Pujol, J. (coords.). Fundamentos de colorimetría. València: Universitat de València, 2002. ISBN 8437054206.

Complementaria:

- Fairchild, M.D. Color appearance models. 2nd ed. Chichester: John Wiley & Sons, 2005. ISBN 0470012161.
- Adams, R.M.; Weisberg, J.B. The GATF practical guide to color management. 2nd ed. Pittsburgh: GATF Press, 2000. ISBN 0883622483.
- Artigas, J.M. [et al.]. Óptica fisiológica: psicofísica de la visión. Madrid: McGraw-Hill Interamericana, 1995. ISBN 8448601157.
- Hunt, R.W.G. The reproduction of colour. 6th ed. West Sussex: John Wiley & Sons, 2004. ISBN 0470024259.
- MacDonald, L.W.; Luo, M.R. Colour image science: exploiting digital media. Chichester: John Wiley & Sons, 2002. ISBN 0471499277.
- Sharma, G. (ed.). Digital color imaging handbook. Boca Raton, Fla.: CRC Press, 2003. ISBN 084930900X.