

ERASMUS MUNDUS JOINT MASTER DEGREE

CO·SI

COLOUR IN SCIENCE AND INDUSTRY



University
of Eastern
Finland



Gjøvik
University
College



University
of Granada



University
Jean Monnet



Changing lives,
opening minds

The European Union
programme for education,
training, youth and sport

2014-2020



Erasmus+

Erasmus+ COSI: Building a long-lasting European center of academic excellence

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<http://master-colorscience.eu/>



EUROPEAN MASTER DEGREES IN COLOUR SCIENCE

PROGRAMMES ▾

APPLICATION ▾

CORPORATE RELATIONS

COMMUNITY ▾



UNIVERSIDAD
DE GRANADA



UNIVERSITY OF
EASTERN FINLAND



With the support of the
Erasmus+ programme
of the European Union

Brussels, 29/07/2014

EACEA/A3/MH/ (2014)

Subject: Erasmus+ Programme - Joint Master Degrees (JMD)
Call for proposals 2014 (EAC/S11/13)

Title: COLOUR in Science and Industry

Reference: 553342-EPP-1-2014-1-FR-EPPKA1-JMD-MOB
(Please quote this number in all correspondence)

The Consortium is a joint venture, involving top European and Asian universities at the forefront of fundamental and applied research and knowledge transfer in **colour science** and industrial leaders in their fields, in sectors where expertise in colour-related applications is growing fast.

COSI

EUROPEAN
MASTER DEGREE

< COLOUR IN
SCIENCE AND
INDUSTRY >

industrial
partners
#15

Be where the
future of
colour
science will
happen

Asian
universities

towards Asian
markets &
knowledge
economies

#5

global academic excellence meeting
worldwide colour markets



ASSOCIATED INDUSTRIAL PARTNERS

OLYMPUS

Your Vision, Our Future

chromasens
Imaging for Professionals

tecnalia
Corporación Tecnológica

Specim **_SC**
SOFTCOLOR

innovative
university
business
cooperation
at the heart
of our
programme
development.

building an
European
center of
academic
excellence

#4

European
universities

cross-
fertilization of
research and
knowledge
transfer



SUPPORTING INDUSTRIAL PARTNERS

technicolor

Fraunhofer
IGD

AkzoNobel

barbieri

CEI BioTic
Granada

SEDOPICA
SEDOPICA ESPAÑA DE S.A.

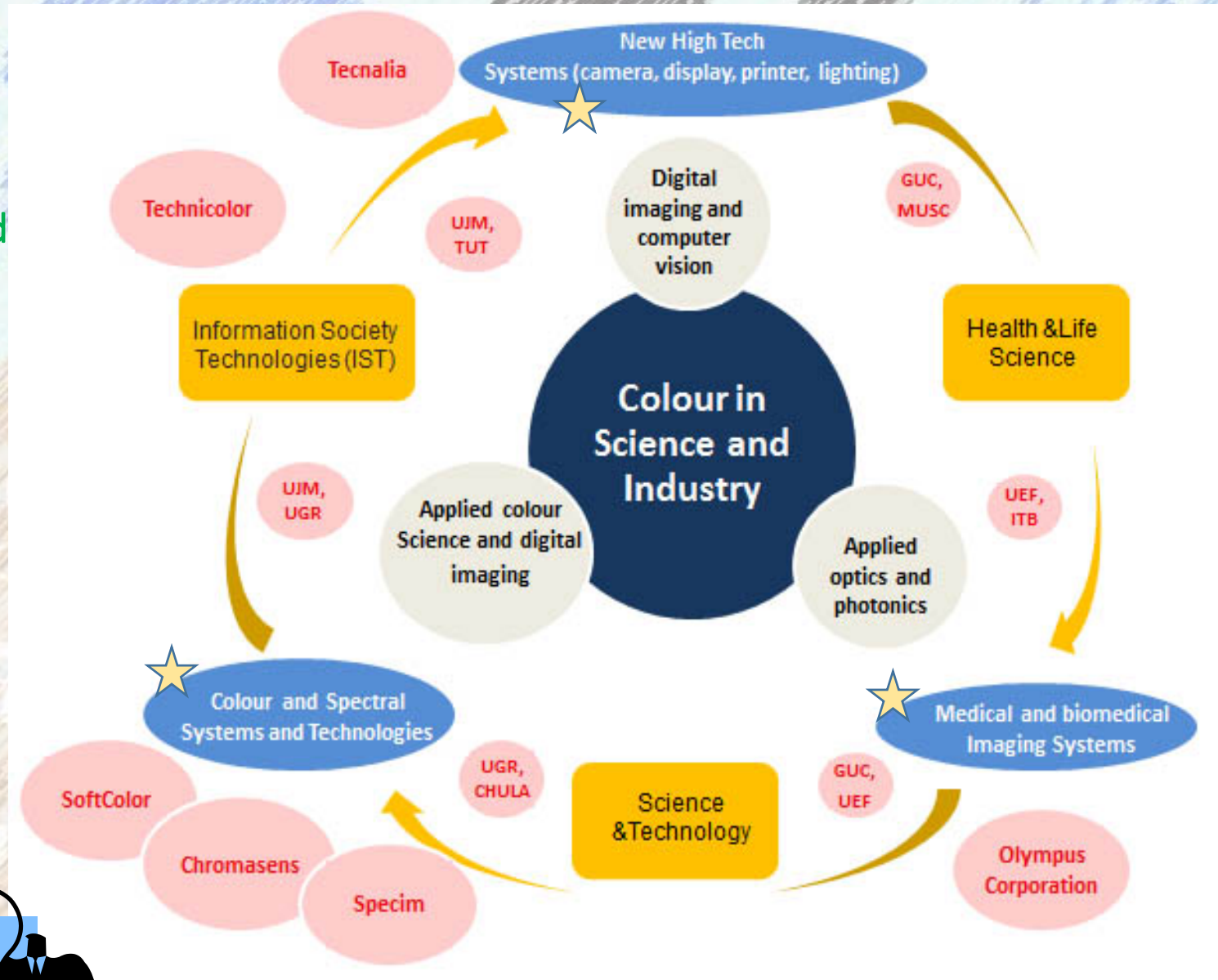
CSIC
Consejo Superior de Investigaciones Científicas

Beckers

IO **FFH**

+ The consortium is composed of a set of world class research laboratories unique in Europe and supported by a huge network of industrial partners (from SMEs to large companies).

- The competencies provided to the graduates appear sufficiently focussed on specific areas of the labour market.



MOBILITY DURING THE TWO-YEAR PROGRAMME:

Semester 1
(Sept-February)



Semester 2
(February-July)



Semester 3
(August-January)



OR



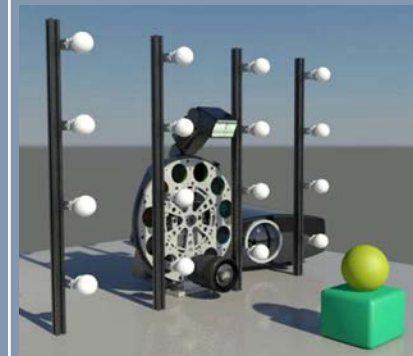
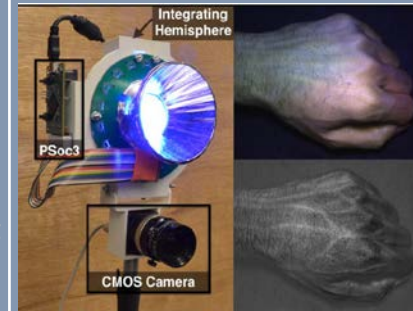
Semester 4
Master Thesis TFM
(January-Sept)



+ The programme is organised around three taught semesters, each offered by a different institution, and a Work Placement in the 4th semester.

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Semester 1 (Sep -Jan)	Semester 2 (Feb - June)	Semester 3 (Aug - Dec)	Semester 4 (Feb - July)
Fundamentals (UJM) 30 ECTS	Pre-specialization (Granada) 30 ECTS	Track 1 (Joensuu) Specialization in Spectral Technologies 30 ECTS	Master thesis: 30 ECTS In a company or a research center on an applied topic linked to a specific socio-economical sector
Mandatory courses: 30 ECTS <ul style="list-style-type: none"> Digital Image Fundamentals Applied Colour Science Data Analysis and Statistics Introduction to scientific programming Applied Photonics and Optics Introduction to specialization fields and industrial study cases 	Mandatory courses: 20 ECTS <ul style="list-style-type: none"> Applied Advanced Colorimetry Human Perception and Cognition Digital Entrepreneurship and Innovation** Fundamentals of Spectral Science 	Mandatory courses: 20 ECTS <ul style="list-style-type: none"> Color Science Laboratory Industrial and Biomedical Optics Spectral Imaging Devices Industrial Projects 	Optional courses: (Extra ECTS) <ul style="list-style-type: none"> Scientific courses taught in other international master programmes coordinated by TUT, MUSC, CHULA, ITB Thai, Indonesian, Japanese, Malay, language and culture
Optional courses: (Extra ECTS) <ul style="list-style-type: none"> Introduction to Matlab Scientific courses taught in other international master programmes coordinated by UJM French language and culture 	Optional courses: 10 ECTS Recommended for Track 1: <ul style="list-style-type: none"> Radiometry, Sources & Detectors Image Acquisition and Reproduction Fourier Optics Recommended for Track 2: <ul style="list-style-type: none"> Advanced Colour Image Processing Computer vision* Project in Computer vision* Optional courses: (Extra ECTS) <ul style="list-style-type: none"> Spanish language and culture 	Optional courses: 10 ECTS <ul style="list-style-type: none"> Computational Colour Display Technologies Machine Vision Pattern Recognition* Optional courses: (Extra ECTS) <ul style="list-style-type: none"> Scientific courses taught in other international master programmes coordinated by UEF Finish language and culture 	
		Track 2 (Gjøvik) Specialization in Applied Colour Imaging 30 ECTS	
		Mandatory courses: 20 ECTS <ul style="list-style-type: none"> Colour in medical imaging Advanced colour management Colour image quality and processing in an imaging workflow Industrial projects 	
		Optional courses: 10 ECTS <ul style="list-style-type: none"> Advanced course in video processing Selected topics in colour imaging Content-based indexing and retrieval Machine learning and Pattern recognition* 	
		Optional courses: (Extra ECTS)	



Diploma grade and grading policy

The COSI programme is built from 4 national degrees awarded by 4 European Universities:

- UGR will deliver the master diploma “Máster Universitario en Ciencia y Tecnología del Color “
- UJM will deliver the master diploma “Master Optics, Image, Vision, Multimedia”
- UEF will deliver the master diploma “Master of Science in Computer Science COSI”
- GUC will deliver the master diploma “Master in Applied Computer Science “

- + The proposal explains very well about the recognition status of the JMD
- + A student agreement with duties and rights of both parties will be signed





Electronic submission of candidates

+ Selection and integration of students

How applications are assessed?

1/ Each eligible applications are first pre-evaluated by two members of the Academic and Management Board according to the to the scoring table and weighted criteria as indicated below:

Criteria used to assess online application	weight
<i>Academic excellence</i>	50%
Recognition of home institution/ recognition of the first degree	10%
Rank/grade/distinction	20%
Adequacy of academic background with COSI requirements	20%
<i>Track-record</i>	30%
Research projects / Professional experience / Former international experience	20%
Recommendation (academic and professionals)	10%
<i>Motivation (as per cover letter)</i>	20%
English proficiency (as per cover letter + test scores)	Discriminating variable (pass/fail)

<http://master-colorscience.eu/>

How to finance your Master degree?

Participation costs for
2018/2020 intake are
set as follows:

6,000 Eur (Programme
country)

Erasmus + EMJMD scholarships

Please note that we are currently applying for a new financement from the European Union. We are unable to guarantee that there will be Erasmus+JMD scholarship for 2018-2019.(apply before 03/03/2017)

- > covers all the duration of the programme (24 months)
- > 32,000 € for European students
- > 45,000 € for non-European students
- # scholarship/s available for 2017-2019
- > 4 scholarships for European students
- > 10 scholarships for non-European students

50 % fee-waivers (halving of participation costs)

(apply before 10/03/2018)

- > covers all the duration of the programme (24 months)
- > 3,000 € for European students
- > 7,000 € for non-European students

COSI scholarships

(apply before 10/03/2018)

- > granted for the first year of the programme
- > 10,500 € for non-EU students
- > 6,500 € for EU-students

Additional financial support & scholarships

Explo'ra scholarships

(apply during semester 2 and 3)

- > cover the second year of the programme
- > 1,615 € for semester 3 and 1,615 € during the Master Thesis
- # scholarship/s available for 2017-2019 = to be confirmed, usually most students are awarded this scholarship

Master Thesis allowances

Work placement during semester 4 is generally paid. It is for instance legally compulsory to pay trainees at least 550 € per month in France. We'll strive to ensure that our industrial and academic partners provide at least this amount to trainees as a minimum. Most of our industrial partners offer internships that provide substantial allowances packages above this minimum, and up to 1,200 € per month

COSI scholarships

COSI scholarships are for the two years of the programme :

- > 10,500€ for the two years for non-EU students
- > 6,500€ for the two years for EU students



EUROPEAN MASTER'S DEGREES IN COLOUR SCIENCE



ABOUT

APPLY

COMMUNITY

STUDENT AFFAIRS

NEWS

We are an **European academic consortium in colour science** offering 2 Master's Degrees designed and operated by an unique world leading university-business cooperation of 4 European universities, 5 Asian universities and 15 industrial leaders across the globe:

COSI / COLOUR IN SCIENCE AND INDUSTRY /

Erasmus+

a two-year scientific Erasmus+ Joint Master's Degree, aiming to train the next generation of highly-skilled industrial experts in applied colour science, in various cutting-edge industries (photonics, optics, spectral imaging, multimedia technologies, computer graphics and vision) in a diverse range of sectors (including multimedia, health care, cosmetic, automotive, food-processing). The two areas of focus are spectral technologies and applied colour imaging.

[**CALL FOR APPLICATIONS FOR 2017-2018 intake open! The deadline for EMJMD scholarships is 15/03/2017. Self-financed students can apply till 15/05/2017 (non-Eu students) and 30/06/2017 (EU students)**]

APPLY

CIMET / COLOUR IN INFORMATICS AND MEDIA TECHNOLOGY /

a two-year research Master's Degree in fundamental color science, preparing students for a doctoral research and engaging them to undertake cutting-edge research projects in photonics, computer vision & imaging science, computer science & multimedia technology. The programme leads graduates to research careers in the academic or research industry.

<http://master-colorscience.eu/>

NO CALL FOR APPLICATIONS in 2017

APPLY