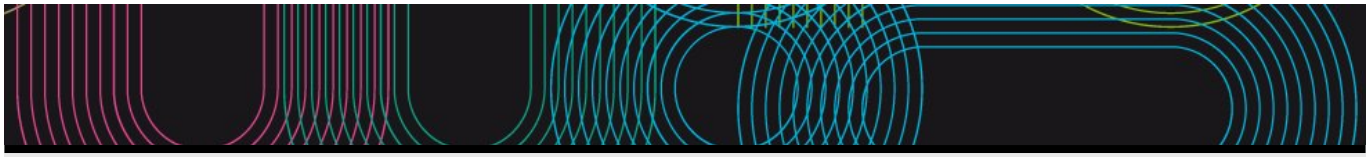

IDENTIFYING DATA				
Real time machine vision				
Subject	Real time machine vision			
Code	V05M185V01207			
Study programme	Máster Universitario en Visión por Computador			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	3	Optional	1st	2nd
Teaching language	English			
Department				
Coordinator	Martín Herrero, Julio			
Lecturers	Martín Herrero, Julio			
E-mail	julio@uvigo.es			
Web	http://imcv.eu			
General description	Workshop for getting acquainted with machine vision cameras and hardware, their configuration, fine tuning and how to work with them in real time.			

Training and Learning Results	
Code	
A5	CB10 Students should possess the learning skills to enable them to continue studying in a largely self-directed or autonomous manner.
B3	Ability to develop computer vision systems depending on the existent needs and apply the most suitable technological tools
C6	To know and apply the fundamentals of image acquisition and machine vision systems

Expected results from this subject	
Expected results from this subject	Training and Learning Results
The students will learn how to efficiently program real time acquisition and processing of images proper of machine vision applications.	A5 B3 C6

Contents	
Topic	
Real time programming for machine vision	.
PC-frame-grabber communication	.
Memory management	.
Structure and usage of a typical machine vision SDK	.
Low-level programming for high speed industrial processes	.

Planning			
	Class hours	Hours outside the classroom	Total hours
Workshops	75	0	75
Systematic observation	0.1	0	0.1
*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Methodologies

	Description
Workshops	Hands-on workshop working in pairs in the lab with a computer and machine vision hardware, using C and C++. On-site attendance is compulsory, except when any extraordinary circumstances may concur.

Personalized assistance

Methodologies	Description
Workshops	Direct access to the teacher during the work at the lab.

Assessment

	Description	Qualification	Training and Learning Results		
Systematic observation	The teacher will follow closely the performance and progress of the students during the workshop, with timely individual feedback.	100	A5	B3	C6

Other comments on the Evaluation

This is an optional experimental subject that requires in situ attendance of the students at the lab. Attendance to each of the four in situ sessions is compulsory. The classes' schedule is published before the enrolment period. Make sure that you will be able to attend the four sessions at UVigo before you enrol in this subject. If you are working, make sure that you get a commitment in writing from your employers allowing you to attend the four scheduled sessions at UVigo before you enrol. Otherwise, DO NOT ENROL, choose another optional subject that does not require in situ attendance. Job commitments are not a recognised cause for leave of absence. Porto students please note: UPorto's general 25% leave of absence DOES NOT APPLY at Uvigo. The only recognised causes for leave of absence at UVigo are the usual force majeure causes: death, serious illness, law enforcement, and acts of God, and they must be officially sanctioned by UVigo's administrative services by means of suitable documentary proof. If a leave of absence is officially sanctioned by UVigo, the evaluation of the missed session will be arranged on a case-per-case basis with consideration of the particular circumstances of the case.

Sources of information

Basic Bibliography

Davies, **Machine Vision**, 3, Elsevier, 2005

Complementary Bibliography

Several, **Webinar series**, Basler, 2020

Recommendations

Other comments

Good working knowledge of C/C++ is essential. Note that this subject requires on-site attendance at the University of Vigo in the programmed dates and times.