[MRE101] ARTIFICIAL VISION

GENERAL INFORMATION

Studies	Master's Degree in ROBOTICS AND CONTROL SYSTEMS			**Subject**	?
Semester	1	**Course**	1	**Mention / Field of specialisation**	
Character	COMPULSORY				
Plan	2023	**Modality**	Face-to-face	**Language**	CASTELLANO/EUSKARA
Credits	5	**Hours/week**	0	**Total hours**	45 class hours + 80 non-class hours = **125 total hours**

PROFESSORS

MAESTRO WATSON, DANIEL
SESAR GIL, IÑIGO

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
(No specific previous subjects required)	Programming Calculus basics Linear algebra basics statistics basics

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
M1R219 - [!] *Seleccionar teorías y métodos relevantes de los campos de percepción y aplicarlos en un nuevo contexto*	x			3,6
M1R223 - [!] *Capacidad de trabajar en equipos multidisciplinares y en un entorno multilingüe y de comunicar, tanto de forma oral como escrita, conocimientos, procedimientos, resultados e ideas relacionadas con los temas afines al máster*		x		0,4
M1R224 - [!] *Capacidad para ejercer su profesión con actitud cooperativa y participativa, y con responsabilidad social*		x		0,4
M1R228 - To communicate your conclusions and the knowledge and ultimate reasons that support them to specialized and non-specialized audiences in a clear and unambiguous way		x		0,6
			Total:	5

KC: Knowledge or Content / SK: Skills / AB: Abilities

CONTENTS

Introduction to Computer Vision.

Camera, lenses and components of a vision system.

Camera model and calibration.

Homographies and 2D image rectification.

Introduction to image processing (Histograms, segmentation, filtering, morfological processing, edge detection, ...) .

Image Stitching.

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Moodle Platform Slides of the subject Specific Master Software	Rafael C. Gonzalez and Richard E. Woods. Digital Image Processing (4th Edition). Pearson Education Limited, 2018. Szeliski, Richard. Computer vision: algorithms and applications. Springer Science & Business Media, 2010.

Hornberg, Alexander, ed. Handbook of machine and computer vision: the guide for developers and users. John Wiley & Sons, 2017.