[MRC102] ROBOT PROGRAMMING

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	6	**Hours/week**	0	**Total hours**	60 class hours + 90 non-class hours = **150 total hours**

PROFESSORS

ELKOROBARRUTIA LETONA, XABIER

ALONSO NIETO, MARCOS

REQUIRED PREVIOUS KNOWLEDGE

Subjects	Knowledge
(No specific previous subjects required)	Basic programming concepts

LEARNING RESULTS

LEARNING RESULTS	KC	SK	AB	ECTS
M1R211 - [!] *Programar un robot para que se obtenga el comportamiento cinemático deseado*			*x*	4,4
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
M1R226 - To apply the knowledge acquired and your problem-solving skills in new, little-known or changing environments within broader (or multidisciplinary) contexts related to your area of study		*x*		0,8
			Total:	6

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

CONTENTS

Industrial Robot Case Study: ABB Robot Studio and IRB 140:

1. Robot Programming Environment2. Basic concepts: Targets, work object, paths, …3. Programing with RAPID4. Interacting with the environment with I/Os5. Interacting with the robot through ETHERNET

ROS

1. Introduction to ROS2. Publisher/subscriber and client/server models3. Development tools4. Simulation: RVIZ/Gazebo

LEARNING RESOURCES AND BIBLIOGRAPHY

Learning resources	Bibliography
Moodle Platform Specific Master Software Slides of the subject Labs Topic related web quires	Mastering ROS for Robotics Programming: Best practices and troubleshooting solutions when working with ROS Lentin Joseph & Jonathan Cacace. Packt Publishing, 3rd edition, 2021