CORSO DI LAUREA MAGISTRALE IN MECHATRONICS ENGINEERING
MASTER DEGREE IN MECHATRONICS ENGINEERING – (T20)

A.Y. 2024-25

MANDATORY SUBJECTS	YEAR	SEM	CFU
Integrated Sensors (Block A|C|D|E)	1	1	9
Robot Mechanics (Block B|C)	1	1	9
Power Electronics and Electrical Drives	2	2	9
VLSI Circuit and System Design	1	2	9
Nanotechnology	1	2	6
Powertrain Technologies for Future Mobility (Block C)	1	2	9
Electronics of IoT and Embedded Systems	2	1	12
Electronics of IOT			6
Design of Embedded Systems for Mechatronics			6
Integrated Sensors (Block B)	2	1	9
Robot Mechanics (Block A|D|E)	2	1	9
Control of Mechanical Systems	2	1	9
Computer Vision	2	2	6
Powertrain Technologies for Future Mobility (Block A|B|D|E)	2	2	9
Formative activities/Internship	1	1	6
Final exam	2		12

BLOCK A - Thermo-Mechanics

SUBJECTS	YEAR	SEM	CFU
Fundamentals of Mechanics of Systems	1	1	6
Mechanics of Materials and Structures	1	2	6
Thermodynamics and Heat Transfer	1	2	6
Machine Design	2	2	6

BLOCK D – Computational Methods

SUBJECTS	YEAR	SEM	CFU
Numerical Methods for Astrophysics	1	1	6
Mathematical Methods for Physics	1	2	8
Laboratory- Calculus	2	1	4
Machine Learning Methods for Physics	2	2	6

BLOCK E – Electromechanics

SUBJECTS	YEAR	SEM	CFU
Innovative Materials with Laboratory	1	1	6
Mechanics of Materials and Structures	1	2	6
Electronic Interfaces	1	2	6
Control of Electrical Motors and Vehicles	2	2	6

BLOCK B- Electronics

SUBJECTS	YEAR	SEM	CFU
Digital Electronics	1	1	6
Innovative Materials with Laboratory	1	1	6
One of the following			
Analogue Electronics	1	2	9
Electronic Interfaces	1	2	6+3extra
One of the following			
Feedback Control Systems	1	2	6
Control of Electrical Motors and Vehicles	2	2	6

BLOCK C - Mechatronic Systems and ICT

- **Sub BLOCK C1 – Learning and Communication**

SUBJECTS	YEAR	SEM	CFU
Innovative Materials with Laboratory	1	1	6
One of the following			
Digital Signal Processing	1	2	6
Deep Learning and Applications	2	1	6
Identification and Neural Networks	2	1	6
One of the following			
Digital Communications	2	1	6
Information Theory and Data Science	2	1	6
Multimedia Processing and Communication	2	1	6
Control of Electrical Motors and Vehicles	2	2	6

- **Sub BLOCK C2 – Interconnected Electric Vehicle Engineering**

SUBJECTS	YEAR	SEM	CFU
Integrated Solutions for Sustainable Mobility and Energy Production	1	2	6
One of the following			
On Board Energy Generation and Storages	1	1	6
Wireless Electromagnetic Technologies	1	1	6
Radar and Localization	2	2	6
Control of Electrical Motors and Vehicles	2	2	6
One of the following			
Electric Propulsion	1	2	6
Digital Signal Processing	1	2	6