



MASTER COURSE IN MECHATRONICS ENGINEERING - A.A. 2023/24

A2 Curriculum Electronics and robotics

FIRST YEAR											
FIRST SEMESTER											
Esse3 code	N°	Courses	SSD	CFU	B	C	D	E	F	Duration (hours)	Notes
146029	1a	Mechatronic systems simulation - Mod. 1 Computational methods	MAT/08	6		6				60	
146030	2a	Precision engineering - Mod. 1 Design of precision systems	ING-IND/12	6	6					60	
146031	3	Mechanical design for mechatronics	ING-IND/14	9	9					90	
146032	4	Digital signal processing for mechatronics	ING-INF/07	6		6				60	
		SAFETY COURSES									(1)
			<i>Tot.</i>	27	15	12	0	0	0		
SECOND SEMESTER											
Esse3 code	N°	Courses	SSD	CFU	B	C	D	E	F	Duration (hours)	Notes
146029	1b	Mechatronic systems simulation - Mod. 2 Modeling	ING-IND/13	9	9					90	
146030	2b	Precision engineering - Mod. 2 Digital manufacturing	ING-IND/16	6	6					60	
140500	5	Automatic control	ING-INF/04	9		9				90	
140417	6	Mechanical vibrations	ING-IND/13	6	6					60	
		Other activities		3					3		(2)
			<i>Tot.</i>	33	21	9	0	0	3		
			Tot. 1st year	60	36	21	0	0	3		

PROFESSOR
Bertolazzi Enrico
Bosetti Paolo
Rustighi Emiliano
Macii David

PROFESSOR
Biral Francesco
Bosetti Paolo
Zaccarian Luca
Bortoluzzi Daniele

SECOND YEAR											
FIRST SEMESTER											
Esse3 code	N°	Courses	SSD	CFU	B	C	D	E	F	Duration (hours)	Notes
146036	7	Distributed estimation for robots and vehicles	ING-INF/07	6		6				60	6 cfu from AD 146033
140506	8	Robotic perception and action	ING-IND/12	9	9					90	
140440	9	Industrial robotics	ING-IND/13	6	6					60	
146037	10	Embedded systems	ING-INF/01	6		6				60	6 cfu from AD 140502
145781	11	Advanced optimization-based robot control	ING-INF/04	6		6				48	offered by DISI from AD 146216
			<i>Tot.</i>	33	15	18	0	0	0		
SECOND SEMESTER											
Esse3 code	N°	Courses	SSD	CFU	B	C	D	E	F	Duration (hours)	Notes
	12a	Elective course		6			6			60	(3)
	12b	Elective course		6			6			60	(3)
140458		Final project		15					15		
			<i>Tot.</i>	27	0	0	12	15	0		
			Tot. 2nd year	60	15	18	12	15	0		

PROFESSOR
Fontanelli Daniele
De Cecco Mariolino
Bortoluzzi Daniele
Brunelli Davide
Del Prete Andrea

TOTAL CFU	120	51	39	12	15	3
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ELECTIVE COURSES											
FIRST SEMESTER											
Esse3 code	N°	Courses	SSD	CFU	B	C	D	E	F	Duration (hours)	Notes
145783		Advanced Formula SAE		6			6				
SECOND SEMESTER											
Esse3 code	N°	Courses	SSD	CFU	B	C	D	E	F	Duration (hours)	Notes
140474		Computer vision	ING-INF/03	6			6			48	offered by DISI
145782		Laboratory of the Internet of Things	ING-INF/01	6			6			60	
146095		Optoelectronics and quantum devices for sensing and automation	FIS/01	6			6			60	
140473		Quality and innovation engineering	ING-INF/07	6			6			60	offered by LM 31
145958		Network dynamics	ING-INF/04	6			6			60	offered by LM 31 - AD 146007 mod. 2
146197		Microelectronics devices, sensors and MEMS	ING-INF/01	6			6			60	

PROFESSOR
Bosetti Paolo

PROFESSOR
Conci Nicola
Brunelli Davide
Lobino Mirko
Petri Dario
Giordano Giulia
Dalla Betta Gian-Franco

NOTES:

(1) = All students must have the certifications of:

- the **general training course "Sicurezza formazione generale"**, or similar course;
- the **specific training course - medium risk "Sicurezza in laboratorio- UniTrento"**, or similar course;
- For any further information about safety training, please visit the website: <https://infostudenti.unitn.it/en/safety-training-for-students>

(2) = The curriculum is considered complete with a total of 3CFU - type F. The credits have to be obtained during the master with the following regulation: <https://www.dii.unitn.it/en/121/other-activities-type-f-credits>.

(3) = Different elective modules - not included in the Manifesto - have to be approved by the Teaching board of the Department.

Approved on 15/02/2023 by the Department's Board