



MASTER COURSE IN MECHATRONICS ENGINEERING - A.A. 2022/23

A3 Curriculum Intelligent vehicles

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)
				Tot. 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)
				Tot. 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
146038	8	Intelligent vehicles and autonomous driving	ING-IND/13	6	6					60	
140502	9	Embedded systems	ING-INF/01	9		9				90	
	12a	Elective course		6			6			60	(3)
				Tot. 27	6	15	6	0	0		
SECOND SEMESTER											
Esse3 code	N°	Courses	SSD	CFU	B	C	D	E	F	Duration (hours)	Notes
146035	10	Dynamics of vehicles	ING-IND/13	6	6					60	
146039	11	Architectures of intelligent transportation systems	ING-IND/13	6	6					60	
	12b	Elective course		6			6			60	(3)
140458		Final project		15				15			
				Tot. 33	12	0	6	15	0		
				Tot. 2nd year	60	18	15	12	15	0	

PROFESSOR
Fontanelli Daniele
Rosati Papini Gastone
Brunelli Davide

PROFESSOR
Biral Francesco
Rosati Papini Gastone

TOTAL CFU 120 54 36 12 15 3

ELECTIVE COURSES											
FIRST SEMESTER											
Esse3 code	N°	Courses	SSD	CFU	B	C	D	E	F	Duration (hours)	Notes
145783		Advanced Formula SAE	ING-IND/12	6			6				
146015		Machine learning	ING-INF/05	6			6			48	offered by DISI
140470		Robotic perception and action	ING-IND/12	6			6			60	6 cfu from AD 140506
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
145764		Deep learning	ING-INF/05	6			6			48	offered by DISI
NEW		Optoelectronics and quantum devices for sensing and automation	FIS/01	6			6			60	
146040		Design methods for unmanned vehicles	ING-INF/01	6			6			60	
145958		Network dynamics	ING-INF/04	6			6			60	offered by LM 31 - AD 146007 mod. 2

PROFESSOR
Bosetti Paolo
TO BE DEFINED
De Cecco Mariolino

PROFESSOR
TO BE DEFINED
TO BE DEFINED
Lobino Mirko
Brunelli Davide
Giordano Giulia

NOTES:

- (1) = To access the research facilities of the Department is required to have obtained the certifications of:
 - the course **Health and safety in the workplace** (Esse3 code FORGE) or similar courses;
 - the course **Sicurezza in laboratorio** (Esse3 code 140550) or similar specific training safety course - medium risk.
- (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.