

**MASTER COURSE IN MECHATRONICS ENGINEERING - A.A. 2024/25**

**A3 Curriculum Intelligent vehicles**

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

PROFESSOR
Macii David
Rustighi Emiliano
Bertolazzi Enrico
Bosetti Paolo

PROFESSOR
Zaccarian Luca
Bortoluzzi Daniele
Biral Francesco
Bosetti Paolo

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)
				<i>Tot.</i>	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			
				<i>Tot.</i>	33	12	0	6	15	0	
				<b>Tot. 2nd year</b>	<b>60</b>	<b>18</b>	<b>15</b>	<b>12</b>	<b>15</b>	<b>0</b>	

PROFESSOR
Fontanelli Daniele
Rosati Papini Gastone
Brunelli Davide

PROFESSOR
Biral Francesco
Rosati Papini Gastone

<b>TOTAL CFU</b>	<b>120</b>	<b>54</b>	<b>36</b>	<b>12</b>	<b>15</b>	<b>3</b>
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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	ING-IND/12	6			6				
146015		Machine learning	ING-INF/05	6			6			48	offered by DISI
146196		Renewable energy conversion systems	ING-IND/13	6			6			60	
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
146292		Laboratory of optoelectronic devices for sensing and automation	FIS/01	6			6			60	
145958		Network dynamics	ING-INF/04	6			6			60	offered by LM 31 - AD 146007 mod. 2
146301		Unmanned vehicles design and programming	ING-INF/01	6			6			60	

PROFESSOR
Bosetti Paolo
Passerini Andrea
Moretti Giacomo
De Cecco Mariolino

PROFESSOR
Conci Nicola
Ricci Elisa
Lobino Mirko
Giordano Giulia
Brunelli Davide

**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.