MASTER COURSE IN MECHATRONICS ENGINEERING (LM 33) - A.A. 2025/26

A2 Curriculum Electronics and robotics

FIRST YEAR

FIRST SEMESTER

Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes	PROFESSOR
146032	1	Digital signal processing for mechatronics	ING-INF/07	IMIS-01/B	6		6				60		Macii David
146031	2	Mechanical design for mechatronics	ING-IND/14	IIND-03/A	9	9					90		Rustighi Emiliano
146029	3a	Mechatronic systems simulation - Mod. 1 Computational methods	MAT/08	MATH-05/A	6		6				60		Bertolazzi Enrico
146030	4a	Precision engineering - Mod. 1 Design of precision systems	ING-IND/12	IMIS-01/A	6	6					60		Bosetti Paolo
		SAFETY COURSES										(1)	
				Tot. 1° sem	27	15	12	0	0	0			

SECOND SEMESTER

Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes	PROFESSOR
146029	3b	Mechatronic systems simulation - Mod. 2 Modeling	ING-IND/13	IIND-02/A	9	9					90		Biral Francesco
146030	4b	Precision engineering - Mod. 2 Digital manufacturing	ING-IND/16	IIND-04/A	6	6					60		Bosetti Paolo
140500	5	Automatic control	ING-INF/04	IINF-04/A	9		9				90		Zaccarian Luca
140417	6	Mechanical vibrations	ING-IND/13	IIND-02/A	6	6					60		Bortoluzzi Daniele
		Other activities			3					3		(2)	
				Tot. 2° sem	33	21	9	0	0	3			
				Tot. 1st year	60	36	21	0	0	3			

SECOND YEAR

FIRST SEMESTER

Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes	PROFESSOR
146036	7	Distributed estimation for robots and vehicles	ING-INF/07	IMIS-01/B	6		6				60	6 cfu from AD 146033	Fontanelli Daniele
140506	8	Robotic perception and action	ING-IND/12	IMIS-01/A	9	9					90		De Cecco Mariolino
140440	9	Industrial robotics	ING-IND/13	IIND-02/A	6	6					60		Bortoluzzi Daniele
146037	10	Embedded systems	ING-INF/01	IINF-01/A	6		6				60	6 cfu from AD 140502	Brunelli Davide
145781	11	Advanced optimization-based robot control	ING-INF/04	IINF-04/A	6		6				60	offered by DISI from AD 146216	Del Prete Andrea
				Tot. 1° sem	33	15	18	0	0	0			

SECOND SEMESTER

Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes	PROFESSOR
	12a	Elective course			6			6				(3)	
	12b	Elective course			6			6				(3)	
140458		Final project			15				15				
				Tot. 2° sem	27	0	0	12	15	0			
				Tot. 2st year	60	15	18	12	15	0			

	TOTAL CFU	120	51	39	12	15	3

ELECTIVE COURSES

Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes	PROFESSOR
146399		Multi-agent system for smart machining	ING-IND/12	IMIS-01/A	6			6				annual (4)	Bosetti Paolo

FIRST SEMESTER

Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes	PROFESSOR
145783		Advanced Formula SAE	ING-IND/12	IMIS-01/A	6			6					Bosetti Paolo

SECOND SEMESTER

Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes	PROFESSOR
140474		Computer vision	ING-INF/03	IINF-03/A	6			6			48	offered by DISI	Conci Nicola
145782		Laboratory of Internet of Things	ING-INF/01	IINF-01/A	6			6			60		Brunelli Davide
146197		Microelectronics devices, sensors and MEMS	ING-INF/01	IINF-01/A	6			6			60		Dalla Betta Gian-Franco
140473		Quality and innovation engineering	ING-INF/07	IMIS-01/B	6			6			60	offered by LM 31	Petri Dario
146360		Superconducting quantum nanosystems, circuits and devices	FIS/03	PHYS-03/A	6			6				offered by PHYSICS Dept.	Mantegazzini Federica

NOTES:

(1) = All students must fulfill **safety training requirements**:

- **General safety training**
- **Specific safety training - Medium Risk**

For any further informations: https://www.unitn.it/en/study/register/documents-and-certificates/safety-training

(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.

(4) = The course will be offered with **split-classroom** approach. Course content is heavily oriented to practical activities; synchronous activities are limited to progress meetings and discussions with teachers. The course is offered in partnership with INSA Toulouse (FR): students will have to collaborate remotely in mixed teams.

Approved on 16/07/2025 by the Department's Board