



MASTER COURSE IN INTELLIGENT MECHATRONICS ENGINEERING - A.A. 2026/27

B1 Curriculum Mechanics

FIRST YEAR												
FIRST SEMESTER												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
146440	1	Digital manufacturing	ING-IND/16	IIND-04/A	6	6					54	
146439	2a	AI and Embedded systems - Mod. 1 Embedded systems	ING-INF/01	IINF-01/A	9		9				81	
146441	3a	Mechatronic Systems Analysis - Mod. 1 Dynamics and vibration of mechatronic systems	ING-IND/13	IIND-02/A	6	6					54	
select one	4	146032 Digital signal processing for mechatronics	ING-INF/07	IMIS-01/B	6	6	6				52	
		146442 Numerical optimization and optimal control for dynamical systems	MAT/08	MATH-05/A							52	
			SAFETY TRAINING									
					Tot. 1° sem	27	12	15				
SECOND SEMESTER												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
145774	5	Automatic control	ING-INF/04	IINF-04/A	6	6					52	
146439	2b	AI and Embedded systems - Mod 2. Mechatronics Artificial Intelligence systems	ING-IND/13	IIND-02/A	6	6					54	
146441	3b	Mechatronic systems analysis - Mod. 2 Modeling and simulation of mechatronic systems	ING-IND/13	IIND-02/A	6	6					52	
146031	6	Mechanical design for mechatronics	ING-IND/14	IIND-03/A	9	9					80	
select one	7	146113 Design of precision systems	ING-IND/12	IMIS-01/A	6	6					54	
		145475 Design methods for industrial engineering	ING-IND/15	IIND-03/B							54	
					Tot. 2° sem	33	33	0	0	0	0	
					Tot. 1st year	60	45	15	0	0	0	

PROFESSOR
Bosetti Paolo
Rech Paolo
Bortoluzzi Daniele
Macii David
Bertolazzi Enrico

PROFESSOR
Zaccarian Luca
Rosati Papini Gastone
Biral Francesco
Rustighi Emiliano
Bosetti Paolo
Cristofolini Ilaria

SECOND YEAR - INACTIVE A.A.2026/27												
STUDENTS MUST CHOOSE AT LEAST 24 CFU FROM THE FOLLOWING:												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	semester	Notes
146034		Advanced mechanical systems	ING-IND/13	IIND-02/A	24	6					1°	
140431		Modeling and design with finite elements	ING-IND/14	IIND-03/A		6					1°	
		Space mechanisms and space systems engineering	ING-IND/13	IIND-02/A		6					1°	
		Vehicle dynamics	ING-IND/13	IIND-02/A		6					1°	
146196		Renewable energy conversion systems	ING-IND/13	IIND-02/A		6					1°	
140426		Functional and smart materials	ING-IND/22	IMAT-01/A			6				1°	
THE CURRICULUM IS COMPLETED BY:												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F		Notes
	12a-b	Elective courses			12			12				(2)
		Internship/other activities			6					6		(3)
		Final project			18				18			
Tot. 2nd year					60							
TOTAL CFU					120							

NOTES: Courses with low student enrollment may be delivered using alternative teaching methods.

(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) = 12 CFU can be freely selected from:

- any first-semester courses not previously chosen

- first-semester courses from the other curricula

- an annually updated list of elective courses

(3) = Completing an internship is mandatory. Students may fulfill the 6 CFU requirement in one of two ways:

- A 6 CFU internship

- A 3 CFU internship combined with 3 CFU from Other Activities - Type F: <https://www.dii.unitn.it/en/121/other-activities-type-f-credits>

For further information on internships: <https://www.dii.unitn.it/en/537/internship>

Approved by the Department Board 18/02/2026



MASTER COURSE IN INTELLIGENT MECHATRONICS ENGINEERING - A.A. 2026/27

B2 Curriculum Robotics and intelligent vehicles

FIRST YEAR												
FIRST SEMESTER												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Hours	Notes
146440	1	Digital manufacturing	ING-IND/16	IIND-04/A	6	6					54	
146439	2a	AI and Embedded systems - Mod. 1 Embedded systems	ING-INF/01	IINF-01/A	9		9				81	
146441	3a	Mechatronic Systems Analysis - Mod. 1 Dynamics and vibration of mechatronic systems	ING-IND/13	IIND-02/A	6	6					54	
select one	4	146032 Digital signal processing for mechatronics	ING-INF/07	IMIS-01/B	6		6				52	
		146442 Numerical optimization and optimal control for dynamical systems	MAT/08	MATH-05/A							52	
				SAFETY TRAINING								
				Tot. 1° sem	27	12	15					
SECOND SEMESTER												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
145774	5	Automatic control	ING-INF/04	IINF-04/A	6	6					52	
146439	2b	AI and Embedded systems - Mod 2. Mechatronics Artificial Intelligence systems	ING-IND/13	IIND-02/A	6	6					54	
146441	3b	Mechatronic systems Analysis - Mod. 2 Modeling and simulation of mechatronic systems	ING-IND/13	IIND-02/A	6	6					52	
146031	6	Mechanical design for mechatronics	ING-IND/14	IIND-03/A	9	9					80	
select one	7	146113 Design of precision systems	ING-IND/12	IMIS-01/A	6	6					54	
		145475 Design methods for industrial engineering	ING-IND/15	IIND-03/B							54	
				Tot. 2° sem	33	33	0	0	0	0		
				Tot. 1st year	60	45	15	0	0	0		

PROFESSOR
Bosetti Paolo
Rech Paolo
Bortoluzzi Daniele
Macii David
Bertolazzi Enrico

PROFESSOR
Zaccarian Luca
Rosati Papini Gastone
Biral Francesco
Rustighi Emiliano
Bosetti Paolo
Cristofolini Ilaria

SECOND YEAR - INACTIVE A.A.2026/27												
STUDENTS MUST CHOOSE AT LEAST 24 CFU FROM THE FOLLOWING:												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	semester	Notes
		Distributed robotics and perception	ING-INF/07	IMIS-01/B	24		6				1°	
		Smart Sensing for robotics and augmented reality	ING-IND/12	IMIS-01/A		6					1°	
		Dynamic robot control	ING-INF/04	IINF-04/A		6					1°	
		Optimisation and learning for robot control	ING-INF/04	IINF-04/A		6					1°	
		Vehicle dynamics	ING-IND/13	IIND-02/A		6					1°	
146038		Intelligent vehicles and autonomous driving	ING-IND/13	IIND-02/A		6					1°	
THE CURRICULUM IS COMPLETED BY:												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F		Notes
	12a-b	Elective courses			12			12				(2)
		Internship/other activities			6					6		(3)
		Final project			18				18			
Tot. 2nd year					60							
TOTAL CFU					120							

NOTES: Courses with low student enrollment may be delivered using alternative teaching methods.

(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) = 12 CFU can be freely selected from:

- any first-semester courses not previously chosen

- first-semester courses from the other curricula

- an annually updated list of elective courses

(3) = Completing an internship is mandatory. Students may fulfill the 6 CFU requirement in one of two ways:

- A 6 CFU internship

- A 3 CFU internship combined with 3 CFU from Other Activities - Type F: <https://www.dii.unitn.it/en/121/other-activities-type-f-credits>

For further information on internships: <https://www.dii.unitn.it/en/537/internship>

Approved by the Department Board 18/02/2026



MASTER COURSE IN INTELLIGENT MECHATRONICS ENGINEERING - A.A. 2026/27

B3 Curriculum Space systems and instruments

FIRST YEAR												
FIRST SEMESTER												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
146440	1	Digital manufacturing	ING-IND/16	IIND-04/A	6	6					54	
146439	2a	AI and Embedded systems - Mod. 1 Embedded systems	ING-INF/01	IINF-01/A	9		9				81	
146441	3a	Mechatronic Systems Analysis - Mod. 1 Dynamics and vibration of mechatronic systems	ING-IND/13	IIND-02/A	6	6					54	
select one	4	146032 Digital signal processing for mechatronics	ING-INF/07	IMIS-01/B	6	6					52	
		146442 Numerical optimization and optimal control for dynamical systems	MAT/08	MATH-05/A							52	
		SAFETY TRAINING										
					27	12	15					
SECOND SEMESTER												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
145774	5	Automatic control	ING-INF/04	IINF-04/A	6	6					52	
146439	2b	AI and Embedded systems - Mod 2. Mechatronics Artificial Intelligence systems	ING-IND/13	IIND-02/A	6	6					54	
146441	3b	Mechatronic systems Analysis - Mod. 2 Modeling and simulation of mechatronic systems	ING-IND/13	IIND-02/A	6	6					52	
146031	6	Mechanical design for mechatronics	ING-IND/14	IIND-03/A	9	9					80	
select one	7	146113 Design of precision systems	ING-IND/12	IMIS-01/A	6	6					54	
		145475 Design methods for industrial engineering	ING-IND/15	IIND-03/B							54	
					33	33	0	0	0	0		
					Tot. 1st year	60	45	15	0	0	0	

PROFESSOR

Bosetti Paolo
Rech Paolo
Bortoluzzi Daniele
Macii David
Bertolazzi Enrico

PROFESSOR

Zaccarian Luca
Rosati Papini Gastone
Biral Francesco
Rustighi Emiliano
Bosetti Paolo
Cristofolini Ilaria

SECOND YEAR - INACTIVE A.A.2026/27												
STUDENTS MUST CHOOSE AT LEAST 24 CFU FROM THE FOLLOWING:												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	semester	Notes
		Remote sensing systems and image analysis	ING-INF/03	IINF-03/A	24		6				1°	
		Spacecraft sensors and instrumentation	ING-INF/01	IINF-01/A			6				1°	
		Scientific mission design	FIS/01	PHYS-01/A			6				1°	
		Space structures and advanced applications	ING-IND/04	IIND-01/D			6				1°	
		AI and on-board computing design	ING-INF/05	IINF-05/A			6				1°	
		Space mechanisms and space systems engineering	ING-IND/13	IIND-02/A		6						1°
THE CURRICULUM IS COMPLETED BY:												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F		Notes
	12a-b	Elective courses			12			12				(2)
		Internship/other activities			6					6		(3)
		Final project			18				18			
				Tot. 2nd year	60							

TOTAL CFU 120

NOTES: Courses with low student enrollment may be delivered using alternative teaching methods.

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

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- **Specific safety training - Medium Risk**

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(2) = 12 CFU can be freely selected from:

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- an annually updated list of elective courses

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Approved by the Department Board 18/02/2026



MASTER COURSE IN INTELLIGENT MECHATRONICS ENGINEERING - A.A. 2026-27

B4 Curriculum Electronics and smart energy systems

FIRST YEAR												
FIRST SEMESTER												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
146440	1	Digital manufacturing	ING-IND/16	IIND-04/A	6	6					54	
146439	2a	AI and Embedded systems - Mod. 1 Embedded systems	ING-INF/01	IINF-01/A	9		9				81	
146441	3a	Mechatronic Systems Analysis - Mod. 1 Dynamics and vibration of mechatronic systems	ING-IND/13	IIND-02/A	6	6					54	
select one	4	146032 Digital signal processing for mechatronics	ING-INF/07	IMIS-01/B	6	6					52	
		146442 Numerical optimization and optimal control for dynamical systems	MAT/08	MATH-05/A							52	
		SAFETY TRAINING										(1)
				Tot. 1° sem	27	12	15					
SECOND SEMESTER												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
145774	5	Automatic control	ING-INF/04	IINF-04/A	6	6					52	
146439	2b	AI and Embedded systems - Mod 2. Mechatronics Artificial Intelligence systems	ING-IND/13	IIND-02/A	6	6					54	
146441	3b	Mechatronic systems Analysis - Mod. 2 Modeling and simulation of mechatronic systems	ING-IND/13	IIND-02/A	6	6					52	
146031	6	Mechanical design for mechatronics	ING-IND/14	IIND-03/A	9	9					80	
select one	7	146113 Design of precision systems	ING-IND/12	IMIS-01/A	6	6					54	
		145475 Design methods for industrial engineering	ING-IND/15	IIND-03/B							54	
				Tot. 2° sem	33	33	0	0	0	0		
					Tot. 1st year	60	45	15	0	0	0	

PROFESSOR
Bosetti Paolo
Rech Paolo
Bortoluzzi Daniele
Macii David
Bertolazzi Enrico

PROFESSOR
Zaccarian Luca
Rosati Papini Gastone
Biral Francesco
Rustighi Emiliano
Bosetti Paolo
Cristofolini Ilaria

SECOND YEAR - INACTIVE A.A.2026/27												
STUDENTS MUST CHOOSE AT LEAST 24 CFU FROM THE FOLLOWING:												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	semester	Notes
145782		Laboratory of internet of things	ING-INF/01	IINF-01/A	24		6				1°	
146197		Micro-electronic devices, sensors and MEMS	ING-INF/01	IINF-01/A			6				1°	
		Electronics and instrumentation for power systems	ING-INF/07	IMIS-01/B			6				1°	
		Smart Grids for Renewable Energy Integration	ING-IND/32	IIND-08/A			6				1°	
		Spacecraft sensors and instrumentation	ING-INF/01	IINF-01/A			6				1°	
146196		Renewable energy conversion systems	ING-IND/13	IIND-02/A		6					1°	
THE CURRICULUM IS COMPLETED BY:												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F		Notes
	12a-b	Elective courses			12			12				(2)
		Internship/other activities			6					6		(3)
		Final project			18				18			
Tot. 2nd year					60							
TOTAL CFU					120							

NOTES: Courses with low student enrollment may be delivered using alternative teaching methods.

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

- **General safety training**

- **Specific safety training - Medium Risk**

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- an annually updated list of elective courses

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- A 6 CFU internship

- A 3 CFU internship combined with 3 CFU from Other Activities - Type F: <https://www.dii.unitn.it/en/121/other-activities-type-f-credits>

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Approved by the Department Board 18/02/2026

MASTER COURSE IN INTELLIGENT MECHATRONICS ENGINEERING - A.A. 2026-27

B5 Curriculum AUSIR (Spectro)

FIRST YEAR

FIRST SEMESTER

Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
146037		Embedded systems	ING-INF/01	IINF-01/A	6		6					6 CFU from AD146439 Mod.1
146440		Digital manufacturing	ING-IND/16	IIND-04/A	6	6						
146015		Machine learning	ING-INF/05	IINF-05/A	6		6				48	offered by DISI
146005/1		Organizations, human resources and innovation - mod. 1 Organization studies and human resources management	ING-IND/35	IEGE-01/A	6	6						offered by LM31
146005/2		Organizations, human resources and innovation - mod. 2 Management, innovation and change	ING-IND/35	IEGE-01/A	6	6						offered by LM31
		SAFETY COURSES										(1)
				<i>Tot. 1° sem</i>	30	18	12	0	0	0		

PROFESSOR

Rech Paolo

Bosetti Paolo

Passerini Andrea

Cirella Stefano

Cirella Stefano

SECOND SEMESTER

Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
145959		Introduction to robotics	ING-INF/04	IINF-04/A	6		6				48	offered by DISI
146069		Modeling and simulation of mechatronic systems	ING-IND/13	IIND-02/A	6	6						6 CFU from AD 146441 Mod. 2
146041		Business development laboratory	ING-IND/17	IIND-05/A	9	9						offered by DISI
146073		Summer school			3					3		
		Elective course			6			6				(2)
				<i>Tot. 2° sem</i>	30	15	6	6	0	3		
				Tot. 1st year	60	33	18	6	0	3		

PROFESSOR

Saveriano Matteo

Biral Francesco

Formentini Marco

ELECTIVE COURSES

SECOND SEMESTER

Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
140473		Quality and innovation engineering	ING-INF/07	IMIS-01/B	6			6			50	offered by LM31
145774		Automatic control	ING-INF/04	IINF-04/A	6			6				6 CFU
145782		Laboratory of Internet of Things	ING-INF/01	IINF-01/A	6			6			54	
140474		Computer vision			6			6			48	offered by DISI
145764		Deep learning			6			6			48	offered by DISI

PROFESSOR

Petri Dario

Zaccarian Luca

Macii David

Conci Nicola

Ricci Elisa

NOTES: Courses with low student enrollment may be delivered using alternative teaching methods.

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

(2) = 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>

Approved by the Department Board 18/03/2026