

MASTER COURSE IN BIOENGINEERING FOR PERSONALIZED MEDICINE (LM 21) - A.A. 2026-27

A1 Curriculum Digital Healthcare

FIRST YEAR												
FIRST SEMESTER												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
146249	1	System physiology and integrated biological processes	BIO/09	BIOS-06/A	6	6					48	
146250	2a	Medical devices quality and safety (Mod. 1 Medical devices quality and safety)	ING-IND/34	IBIO-01/A	6	6					52	
	2b	Medical devices quality and safety (Mod. 2 Value based health care)	ING-INF/06	IBIO-01/A	3	3					24	
146251	3a	Fundamentals of materials engineering and biomechanics for healthcare applications (Mod. 1 Materials)	ING-IND/22	IMAT-01/A	6	6					48	
	3b	Fundamentals of materials engineering and biomechanics for healthcare applications (Mod. 2 Biomechanics)	ING-IND/14	IIND-03/A	6		6				48	
		SAFETY TRAINING										(1)
				Tot. 1° sem	27	21	6	0	0	0		
SECOND SEMESTER												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
146252	4a	Informatics and electronics for healthcare 4.0 (Mod. 1 Cloud computing and Distributed systems)	ING-INF/05	IINF-05/A	6		6				48	
	4b	Informatics and electronics for healthcare 4.0 (Mod. 2. Embedded electronics and sensors)	ING-INF/01	IINF-01/A	6	6					52	
146253	5a	Complements of bioengineering (Mod. 1 - Design and manufacturing of biomedical products)	ING-IND/34	IBIO-01/A	6	6					52	
	5b	Complements of bioengineering (Mod. 2 - Data engineering for biomedical sciences)	ING-INF/06	IBIO-01/A	6	6					52	
146260	6	Medical imaging laboratory	ING-INF/06	IBIO-01/A	6	6					52	
		Other activities			3					3		(2)(3)
				Tot. 2° sem	33	24	6	0	0	3		
				Tot. 1st year	60	45	12	0	0	3		

PROFESSOR
Piccoli Giovanni
Bucciarelli Alessio
Nollo Giandomenico
Pegoretti Alessandro
Fontanari Vigilio

PROFESSOR
TO BE DEFINED
TO BE DEFINED
Tirella Annalisa
Rovati Luigi
Boscolo Galazzo Ilaria

SECOND YEAR												
FIRST SEMESTER												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
146261	7	Advanced signals processing and modeling of physiological systems	ING-INF/06	IBIO-01/A	6	6					52	
146262	8	Modelling and analysis of human movement	ING-IND/13	IIND-02/A	6		6				52	
146259	9	Laboratory diagnostics for precision medicine	MED/04	MEDS-02/B	6	6					48	
	12a	Elective course			6			6			48	(4)
				Tot. 1° sem	24	12	6	6	0	0		
SECOND SEMESTER												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
146264	10	Artificial intelligence for biomedical problems solving	ING-INF/06	IBIO-01/A	6	6					52	
146263	11	Robotics and assistive devices in medicine	ING-INF/04	IINF-04/A	6		6				52	
	12b	Elective course			6			6			48	(4)
146265		Final project			18				18			
				Tot. 2° sem	36	6	6	6	18	0		
				Tot. 2nd year	60	18	12	12	18	0		
				TOTAL CFU	120	63	24	12	18	3		

PROFESSOR
Masè Michela
Biral Francesco
Quattrone Alessandro

PROFESSOR
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De Cecco Mariolino

ELECTIVE COURSES												
FIRST SEMESTER												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
146258	12a	Diagnostic and therapeutic technologies for personalized medicine	ING-IND/34	IBIO-01/A	6			6			52	
146256	12a	Technologies and innovation in health: food and medical grade products	ING-IND/34	IBIO-01/A	6			6			52	
SECOND SEMESTER												
Esse3 code	N°	Courses	SSD	SSD 2024	CFU	B	C	D	E	F	Duration (hours)	Notes
146255	12b	Additive technologies for customized metallic implants	ING-IND/21	IIND-03/C	6			6			48	
146257	12b	Transport phenomena in living systems	ICAR/01	CEAR-01/A	6			6			52	
146254	12b	Engineered materials for precision medicine	ING-IND/34	IBIO-01/A	6			6			52	

PROFESSOR
Maniglio Devid
Tirella Annalisa

PROFESSOR
Pellizzari Massimo
Siviglia Annunziato
Maniglio Devid

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) = 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) = **International students** are required to demonstrate an adequate level of knowledge of the Italian language (level A1).

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

MASTER COURSE IN BIOENGINEERING FOR PERSONALIZED MEDICINE (LM 21) - A.A. 2026-27

A2 Curriculum Emerging and Sustainable Medical Technologies

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TOTAL CFU	120	63	24	12	18	3
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146263	12b	Robotics and assistive devices in medicine	ING-INF/04	IINF-04/A	6			6			52	
146260	12b	Medical imaging laboratory	ING-INF/06	IBIO-01/A	6			6			52	

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Approved on 18/02/2026 by the Department's Board