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PhD School - Politecnico di Milano

Regulations of the PhD Programme in:

BIOENGINEERING

Cycle XLI

1. General Information

PhD School - Politecnico di Milano

PhD Programme: BIOENGINEERING

Course start: September 2025

Location of the PhD Programme: Milano Leonardo

Promoter Departments:
- Department of Electronics, Information and Bioengineering
- Department of Chemistry, Materials and Chemical Engineering “G. Natta”

Scientific Disciplinary Sectors:
- IBIO-01/A - Bioingegneria

PhD School Website: https://www.dottorato.polimi.it/en/
PhD Programme Website: http://www.phdbioengineering.polimi.it/

Scientific-disciplinary group:
09/IBIO-01 - BIOINGEGNERIA

2. General presentation

The PhD programme in Bioengineering is designed to train professionals to pursue their careers primarily in the field of Bioengineering.
It addresses theoretical and experimental activities in four major research areas:
- Biomimetic Engineering and Micro-Nano Technologies
- Rehabilitation Engineering and Technology
- Technologies for Therapy
- Physiological Modelling and non-Invasive Diagnostics.

More specific areas include, but are not limited to:
- Molecular and cellular engineering
- Biomaterials
- Tissue engineering
- Bio-artificial interfaces and devices
- Neuroprostheses
- Movement analysis
- Cardiovascular and respiratory system bioengineering

- Central nervous system signal and image processing for rehabilitation
- Biomechanics
- Computational fluid dynamics
- Computer-assisted surgery and radiotherapy
- Artificial organs
- Implantable devices
- Microfluidic and lab-on-a-chip systems
- Biomedical signal and image processing
- E-Health
- Bioinformatics, functional genomics and molecular medicine
- Robotics
- Artificial intelligence in medicine.

Research activities are centered on theoretical models, methods, and technologies supporting the design of applications, software and hardware systems, as well as the development of tools and prototype devices. The active collaboration with industrial and clinical partners supports the integration between theory and application, one of the key strengths of this PhD programme.

Internships at prestigious research institutes in Italy and abroad are essential elements of the doctoral training, offering students valuable opportunities to expand their skills and research experience. The scientific and research activities of PhD candidates are deeply embedded in research laboratories both within and outside the Departments, in collaboration with external research institutions and university hospitals.

Publications in peer-reviewed scientific journals, participation in international projects, and numerous research collaborations confirm the high standard and excellence of the work carried out within this PhD programme.

The PhD Board is composed of highly qualified and active researchers in the field of Bioengineering, affiliated with either the Department of Electronics, Information and Bioengineering (DEIB) or the Department of Chemistry, Materials and Chemical Engineering “G. Natta” (DCMC). The Coordinator chairs the Faculty Board, oversees the preparation of the annual Educational Programme, and organises the general educational activities of the PhD course (see Attachment A1). The Faculty Board is responsible for implementing the Educational Programme and for managing the didactical and administrative activities related to the PhD programme (see Attachment A2).

3. Objectives

The main objective of the PhD Programme in Bioengineering is to prepare candidates to develop scientific research projects addressing complex problems that may occur at various scales, from the molecular and cellular levels to whole organisms and biomedical systems. PhD candidates explore original methods, devices, and systems with diverse goals: expanding scientific knowledge, proposing innovative approaches to diagnosis and therapy, and improving healthcare systems and daily life services. The programme is

designed to nurture advanced engineering problem-solving skills in biomedical, healthcare, and life sciences, both within research groups and in public or private industrial settings, through a strong interdisciplinary training that bridges engineering with medical and biological knowledge.

By the end of the programme, candidates are expected to be capable of independently leading innovative research and development projects in the field of Bioengineering, propose novel methodological and technological solutions, and critically assess the impact of these technologies on healthcare, life sciences, and the biomedical industry.

One of the distinctive skills developed during the PhD experience is the ability to transfer knowledge effectively, adapting it to different contexts, audiences, and communication occasions. This skill enables PhD graduates to work effectively in teams and disseminate their research results both within their specific community and to broader, more diverse audiences.

The PhD programme aims to support candidates in communicating technical information, both orally and in the written form, tailored to academic or non-academic recipients. This goal is supported by courses offered by the PhD School, including Technical Communication classes. Additionally, candidates participate in activities promoting experiential learning ('learning by doing'), the typical learning method of the PhD journey.

4. Professional opportunities and job market

PhD graduates in Bioengineering have access to a broad range of career opportunities, including research positions in universities, public and private research institutions, and public healthcare services, as well as roles within the industrial and clinical sectors.

More broadly, the skills acquired during the PhD are highly valued for the coordination and management of research projects. The programme also actively encourages the development of spin-off and start-up initiatives to promote the exploitation of innovative research outcomes. Moreover, fellowships directly sponsored by external organizations often lead to concrete employment opportunities following graduation.

5. Enrolment

5.1 Admission requirements

Both Italian and international applicants are eligible to apply. Candidates must hold one of the following: a degree awarded under the Italian university system prior to Ministerial Decree D.M. 3.11.1999 no. 509; a Master of Science degree in accordance with D.M. 3.11.1999 no. 509; a Master of Science degree under D.M. 22.10.2004 no. 270; or an equivalent academic qualification obtained abroad, comparable in duration and content to an Italian degree, with a minimum of five years of university studies.

Certified proficiency in the English language is a mandatory requirement for admission. For specific language requirements, please refer to the PhD School website.

Admission to the programme is based on the evaluation of the candidate's academic curriculum, motivation letter, and a research proposal outlining a possible PhD project, submitted at the time of the application.

5.2 Admission deadlines and number of vacancies

The number of available positions is indicated in the Call for admission to the 41st PhD cycle Programmes: https://www.dottorato.polimi.it/en/phd-programmes/engineering/bioengineering

Scholarships on both general and specific themes are available, in accordance with provisions in the call for admission.

6. Contents

6.1 Requirements for the PhD title achievement

The PhD title in Bioengineering is awarded upon the completion of at least three years of full-time study and research, culminating in the development and defense of a doctoral thesis.

Candidates are required to demonstrate knowledge of the Italian language at a minimum of A1 level of the Common European Framework of Reference for Languages (CEFR). This requirement must be fulfilled to register for the final examination. Italian native speakers and those who can provide proof of the required level of proficiency will be exempt from this obligation.

A formal and mandatory requirement for PhD Candidates in Bioengineering is the completion of at least 30 course credits (see Section 6.3), in addition to the continuous pursuit of research and study activities.

Each year, the PhD Faculty Board evaluates the progress of each candidate to determine eligibility for progressing into the following academic year or for admission to the final examination. Evaluation criteria include the originality and scientific value of the research, as well as the quality and outcomes of the educational programme. Additionally, the candidate's performance is assessed based on both qualitative and quantitative indicators of scientific publication output, which must explicitly state the candidate's affiliation with Politecnico di Milano (see Section 6.5 for further details).

At the beginning of the programme, each PhD candidate is assigned a Tutor by the Faculty Board. The Tutor, who is a member of the Board, supports and guides the candidate throughout the training programme. Tutors assist in selecting the appropriate courses to be included in the individual study plan to be submitted for approval to the PhD Programme Coordinator (see also Section 6.4). If necessary, the Faculty Board may assign additional courses to one or more candidates to strengthen their knowledge in areas specifically relevant to their research projects.

Additionally, each candidate must experiment with three modes of technical-scientific communication:

1. Oral presentation to experts in the field and topic, aimed at developing the ability to communicate advanced content within a limited timeframe, highlighting key aspects of the research/project and justifying methodological choices, to an audience with high evaluation skills. This experience, aimed at sharing projects with colleagues, is achieved by participating in at least one conference or workshop where research results are presented.
2. Oral presentation to stakeholders with expertise in the field but not in the specific topic, transferring contents with appropriate details in limited timeframes. This skill, aimed at the ability to transfer research/project content to non-expert collaborators, is gained through specific active training experiences with specific goals and typical timelines of academic and corporate settings.
3. Written communication for a community of experts. This skill is aimed at the ability to organize the document content, shorter than a book or thesis but still broad in scope, with an appropriate level of technical-scientific detail. This mode, typical of internal reports or technical notes, is experienced by creating written documents addressed to a relevant scientific community such as scientific or technical articles.

Each candidate is required to participate as a speaker in at least one international conference or workshop, complete at least one training activity, and publish at least one scientific or technical contribution aimed at an expert community. Any exceptions must be justified and authorized by the Faculty Board.

6.2 Research development

The primary objective of all PhD programmes at Politecnico di Milano is to foster a research-oriented mindset, equipping candidates with advanced skills and in-depth expertise in a specific research area. To achieve this, PhD students develop strong problem-solving abilities in complex contexts, including the capacity to conduct in-depth analyses, identify original solutions, and assess their practical applicability. These competencies enable PhD graduates to pursue research careers both in academia and in public or private organizations.

As part of their training, PhD candidates are required to produce an original research contribution. The doctoral thesis must present findings that advance knowledge in the candidate’s area of study and align with the research topics pursued within the Department hosting the PhD programme. The thesis should contextualize the candidate's original work within the current state of the art in the relevant research field.

Doctoral research is carried out under the supervision of a Supervisor ("Relatore"), who supports the candidate in defining and conducting the research activities. The Supervisor may be external of the Politecnico di Milano and is not necessarily a member of the Faculty Board. One or more Co-Supervisors may also be appointed to provide additional guidance.

Throughout the programme, candidates are encouraged to engage in activities aimed at strengthening their personal development and research capabilities. The PhD programme actively promotes collaboration with research groups, particularly those based abroad. Research stays of at least three months are strongly encouraged, as they provide valuable opportunities for candidates to acquire new competencies and enrich their doctoral research. The standard duration of the PhD programme is three years.

6.3 Objectives and general framework of the teaching activities

The Doctoral Programmes and the Doctoral School at Politecnico di Milano offer a range of educational activities of varying nature, including courses, seminars, design workshops, and laboratory sessions. These teaching activities cover both fundamental research topics—such as problems, theories, and methodologies, which form the foundation of the PhD programme and define its cultural and academic identity—and specialized topics closely related to the research developed in the candidates' theses.

Courses are generally delivered in English, unless otherwise specified.

Structured teaching activities allow PhD candidates to earn ECTS credits. Each course has a typical weight of 5 ETCS (25-30 hours). Other types of activities, typically more specialized and not easily quantifiable in terms of teaching content, are considered as part of the candidate's scientific development and are evaluated by the Faculty Board, but do not lead to the awarding of credits.

The Doctoral School also offers a series of courses focused on developing transversal and transferable skills. These courses aim to equip doctoral students with competencies that are valuable across different career paths and responsive to the evolving needs of the global economy and society. A summary of the Doctoral School courses offered for the 2025–2026 academic year is provided in the following table (Table A) and at the following web page:
https://aunicalogin.polimi.it/aunicalogin/getservizio.xml?id_servizio=284&k_corso_la=1300

Table A: SUGGESTED CROSS –SECTORAL (TRANSVERSAL/SOFT SKILLS) COURSES

Course Title	Professor name	ECTS
ADVANCED INTERACTION SKILLS FOR ACADEMIC PROFESSIONALS	ARNABOLDI MICHELA	5
COMMUNICATION STRATEGIES THAT SCORE IN WORLDWIDE ACADEMIA	CONCI CLAUDIO	5
CREATIVE DESIGN THINKING	CANINA MARIA RITA	5
DIGITAL HUMANISM	SCHIAFFONATI VIOLA	5
ENGLISH FOR ACADEMIC COMMUNICATION	BISCARI PAOLO	5
ETHICAL ASPECTS OF RESEARCH ON DUAL-USE TECHNOLOGIES	MASARATI PIERANGELO	5
ETHICS OF ARTIFICIAL INTELLIGENCE	ROCCHI DANIELE	5
HOW TO SUPPORT COMPLEX DECISIONS: APPROACHES AND TOOLS	OPPIO ALESSANDRA	5
INDUSTRIAL SKILLS	BISCARI PAOLO	5
INNOVATIVE TEACHING SKILLS	BRUNETTO DOMENICO SAVIO	5
INTRODUCTION TO ACADEMIC RESEARCH	VOLONTE PAOLO GAETANO	5
LA COMUNICAZIONE NELLA SCIENZA	PAGANONI ANNA MARIA	5
POWER OF IMAGES AND VISUAL COMMUNICATION FOR RESEARCH DISSEMINATION	IAROSSI MARIA POMPEIANA	5
PRACTICING RESEARCH COLLABORATION	PIZZOCARO SILVIA LUISA	5
PROFESSIONAL COMMUNICATION	DI BLAS NICOLETTA	5
PROJECT MANAGEMENT (IN ACTION)	MANCINI MAURO	5
PROJECT MANAGEMENT BASICS	FUGGETTA ALFONSO	5

RECORDING WORK 4 BUILDING MEMORY: METHODS, PRACTICES, TOOLS, SKILLS TO MANAGE THE KNOWLEDGE	BOERI ELISA	5
RESEARCH COMMUNICATION. ISSUE MAPPING: EXPLORING PUBLIC DEBATES SURROUNDING ACADEMIC TOPICS	COLOMBO GABRIELE	5
RESEARCH SKILLS	BISCARI PAOLO	5
SCIENCE DIPLOMACY FOR RESEARCHERS. FILLING THE GAP BETWEEN SCIENCE AND POLICY WITHIN THE GLOBAL CHALLENGES	SHENDRIKOVA DIANA	5
SCIENCE, TECHNOLOGY, SOCIETY AND WIKIPEDIA	RAOS GUIDO	5
SCIENTIFIC/ACADEMIC ENGLISH: WRITING AND PRESENTING WITH AND WITHOUT THE SUPPORT OF LLMS	JACCHETTI EMANUELA	5
SCIENTIFIC COMMUNICATION IN ENGLISH	BISCARI PAOLO	5
STRENGTHENING CRITICAL SPATIAL THINKING	ARMONDI SIMONETTA	5
SULLA RESPONSABILITÀ ETICA DELLA TECNICA	OSSI PAOLO MARIA	5
SUSTAINABILITY METRICS, LIFE CYCLE ASSESSMENT AND ENVIRONMENTAL FOOTPRINT	LAVAGNA MONICA	5
TEACHING METHODOLOGIES, STRATEGIES AND STYLES	SANCASSANI SUSANNA	5
THE COPERNICUS GREEN REVOLUTION FOR SUSTAINABLE DEVELOPMENT	OXOLI DANIELE	5

At least 10 out of the total mandatory 30 training credits must be acquired through soft and transferable skills courses organized by the Doctoral School.
At least 15 out of the 30 total mandatory credits must be achieved through courses offered by the PhD programme in Bioengineering (see Table B), specific to the Bioengineering area ('characterizing courses').Since the XXXIV cycle, the offer includes every year, at least:

a. a course on biostatistics and experimental design;
b. a course on methods and techniques for modelling (alternating multi-scale models of biomedical systems, in one year, and biomedical data, signals and images modelling, in the following year);
c. a course on experimental methods and techniques for laboratory measurements (alternating electronic technologies in biomedical engineering, in one year, and experimental biomechanics, in the following year);
d. at least one course on new perspectives and trends in biomedical engineering technologies;
e. a cycle of seminars, at least five per year, covering the following topics: image processing, signal processing biomechanics of the musculo-skeletal system, biomechanics of the cardio-vascular system,regenerative medicine (biomaterials and mechanobiology), neuroengineering, rehabilitation, robotics, wearables, and artificial intelligence in medicine.

The offer also includes the annual school of the Italian National Bioengineering Group, which takes place in a location decided by the Association. Each year, the School focuses on a different topic.
The final 5 credits can be selected either from the courses offered by the PhD School, by the PhD Programme in Bioengineering or by other PhD Programmes. The latter option is subject to approval by the Faculty Board.
The Candidates are strongly encouraged to attend all the courses within the first two years and devote most of the second and the third years to research and development of the PhD thesis. However, the Candidates should relentlessly dedicate most of their working time to the research activity, following the lead of their Supervisors and the Faculty Board.
The table below summarises the Candidate's path (as regards coursework activities).

First/Second Year

Courses	*Possible details or reference to following tables*	*Number of ECTS credits (min-max)*	*Note*
PhD School Courses		*10-15*	
Courses characterising the PhD Programme	*Table A*	*15-20*	Minimum 1 Annual Bioengineering School (Bressanone-Brixen)
Other PhD courses		*0-5*	

Third year
In the third year the Candidate should devote him/herself entirely to the research and the development of the PhD thesis.

PhD Course List

A) The PhD Programme in Bioengineering organizes the **Characterizing Courses** listed in table B. For the admission to the final exam, the acquisition of at least 15 credits in this list is **mandatory**.

B) The PhD School organises general and interdoctoral courses every year. The acquisition of **at least 10 credits** is **mandatory** among the courses organized by the PhD School (see table A above).

C) Other PhD courses
A maximum of 5 mandatory credits can be obtained by choosing among courses provided by other PhD Programmes at Politecnico di Milano and/or external Institutions (in this case the preliminary approval by the Tutor and the coordinator is mandatory).

PREPARATORY COURSES (only if foreseen)
If the Supervisor and the Tutor deem it useful or necessary for the Candidate to attend preparatory courses (chosen among the courses activated at the Politecnico di Milano) the Faculty Board of the PhD programme can assign some extra credits to be acquired to complete the training path. The credits thus acquired will be considered additional to the compulsory credits to be acquired with the doctoral courses.

SPECIALISTIC COURSES, LONG-TRAINING SEMINARS
The attendance of Specialist Courses, Workshops, Schools, Seminar cycles is strongly encouraged and may permit to acquire credits if certified and graded according to the modalities set by the Faculty Board and the preliminary approval of the study plan submitted by the Candidate.
Table B reports the list of the courses scheduled for the 2025-2026 academic year. Other courses can be activated during the year. In this case, Candidates will be promptly informed and will be able to include these new courses in their study plan.

Table B: PhD COURSES CHARACTERISING THE PHD PROGRAMME IN BIOENGINEERING

	COURSE TITLE	***RESPONSIBLE PROF.***
1	Open-source data science: structuring, sharing, and exploiting multi-center and multi-source biomedical data	COELLI STEFANIA
2	Run to Preclinical Studies! Design and Compliance of Substance-Based Medical	CONCI CLAUDIO

	Devices under MDR	
3	AI METHODS FOR BIOENGINEERING CHALLENGES	MAINARDI LUCA
4	EXPERIMENTAL BIOMECHANICS – A.A. 2025-2026	LA BARBERA LUIGI
5	BIOSTATISTICS AND EXPERIMENTAL DESIGN	PATTINI LINDA
6	SEMINARS IN BIOMEDICAL ENGINEERING	SONCINI MONICA
7	Multimodal data integration in biomedical applications	CARRARA MARTA
8	Digital twin for personalized medicine in cardiovascular diseases: advanced image-based data analytics and computational approaches	CORTI ANNA
9	Electronics Technologies in Biomedical Engineering	FERRANTE SIMONA

6.4 Presentation of the study plan

PhD students must submit a study plan, which can be reviewed periodically (approximately every three months), to adapt it to any changes to the list of courses or to needs motivated by the development of their doctoral career. The study plans must be approved by the Coordinator of the Doctoral Programme, in accordance with the procedures established by the Faculty Board of the Programme itself.

6.5 Annual assessment

At the end of each academic year, PhD students must pass an annual assessment in order to be admitted to the following PhD year. The evaluation is based on a written report and an oral presentation offered to a Commission composed of 3 to 5 Faculty Board members. In the first year, the presentation is entrusted to the Tutor who will report to the Faculty Board.

The written report must contain: i) a brief description of the Candidate's specific activities on her/his doctoral project; ii) a brief description of the Candidate's other research activity during the year under examination; iii) the Candidate's publications during the year.

The activities of doctoral students that can provide additional elements for the evaluation typically include: internships, external courses (carried out at other academic institutions, companies or other), national and international seminars, conferences and workshops, participation in national and international research projects, scientific paper writing and paper presentations on research results, support for teaching activities.

The evaluation of the third year establishes the admission of the Candidate to the final discussion of the doctorate (PhD defence).

Following each annual evaluation, Candidates receive an evaluation expressed with the following grades: A (excellent), B (very good), C (good), D (fair), E (poor, insufficient to pass the exam).

In the case of grades from A to D, the Candidate is admitted either to the following year (1st and 2nd year assessment) or to the final exam (3rd year assessment). In case of grade E, the Candidate is qualified as "repeating Candidate" (Er) or "impossible to continue the doctorate" (Ei).

After the final year, Candidates who have achieved sufficient results but need more time to write their thesis can obtain an extension of up to 12 months.

6.6 PhD thesis preparation

The main objective of the doctoral career is the development of an original research contribution. The doctoral thesis should contribute to the advancement of knowledge in the Candidate's research field. The doctoral study and research work takes place full-time, during the three years of the doctoral programme. Internships or periods of study in companies or other bodies – in Italy or abroad – can

complete the Candidate's preparation.
The doctoral research is developed under the guidance of a Supervisor, who supports the Candidate in setting out and in the daily activities related to the development of the thesis. The PhD student must prepare an original thesis, explaining how the thesis contributes to the advancement of the state of the art in the research field. The contents of the thesis must also be consistent with the research themes of the Department where the PhD programme is developed.
At the end of the doctoral studies, the Faculty Board evaluates the Candidate's work. Candidates who receive a positive evaluation can submit their thesis to two external reviewers for peer review. If the evaluation provided by the reviewers is positive (or after the revisions requested by the external reviewers), the Candidates can discuss their thesis in a final exam, before a Commission made up of three members (of which at least two must be external experts).

7. Laboratories, PhD Secretary Services

7.1 Laboratories

The scientific research activity of PhD students takes place in experimental laboratories located at Politecnico di Milano or outside, typically in research centres, hospitals, industries.
When the research is carried out within Politecnico, PhD students are usually assigned to one of the following laboratories belonging to DEIB or DCMC:

- Laboratory of Biological Structure Mechanics (LaBS) - DCMC
- Laboratory of Movement Analysis "Luigi Divieti" – DEIB
- Medical Informatics Laboratory – DEIB
- Neuroengineering and Medical Robotics Laboratory (NearLab) - DEIB
- Biosignals, Bioimaging and Bioinformatics (B3 Lab) – DEIB
- Biomaterials Laboratory and Biofabrication(BeFore) – DCMC
- BioAvatar Lab (DCMC)
- Biomedical Technology Laboratory (TBMLab), comprising CasCart, LaRes, and TechRes Labs - DEIB
- Experimental Micro and Biofluid Dynamics (μBS Lab) – DEIB
- Computational Biomechanics Laboratory – DEIB
- Biocompatibility and Cell Culture Laboratory (BioCell) - DCMC
- Bioreactors Laboratory – DCMC.

The Istituto di Elettronica, Ingegneria dell'Informazione e delle Telecomunicazioni (IEIIT) is another possible option. IEIIT is part of the Consiglio Nazionale delle Ricerche (CNR, the Italian National Research Council) and is located at DEIB.

7.2 Administrative offices of the PhD Programme in Bioengineering

Secretary
Chiara Zitta – Marco Simonini
Department of Electronics, Information and Bioengineering (DEIB)
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e-mail: fabio.conti@polimi.it

8. Internationalization and inter-sectoriality

A research internship in external laboratories is strongly recommended.
Politecnico di Milano supports joint doctoral paths with international Institutions and Joint and Double Doctoral Programmes. Further information is available on the Doctoral School website and on the Doctoral Programme website.
Interaction with and exposure to non-academic fields offer significant benefits to doctoral students and research and innovation intensive employment sectors. Direct exposure to challenges and opportunities in the non-academic sectors of economy and society at large is facilitated by networking, connectivity, cross-sectoral mobility and broad access to knowledge. In particular, the PhD Programme in Bioengineering considers the following collaborations: European Training Networks (ETN), Doctoral Networks - Marie Skłodowska Curie Actions (MSCA), international agreements such as CSF-Confap (Brazil) and CSC (China), several agreements with industries (Medtronic (USA), E-Novia Spa, LIFE CORPORATION Sa (LUX), ALASCOM Services Srl, Medteor GmbH (GER), AB.ACUS Srl, Qura Srl, Kalpa Srl, AZCOM Technology Srl, Lifecharger Srl, Linkverse Srl), research and clinical centres, such as CNR Institutes (STIIMA, IEIIT); IRCCS (E. Medea, Policlinico S. Donato, Besta, Ist. Maugeri, Ist. Nazionale dei Tumori, Ist. Europeo di Oncologia, Humanitas, Ente Ospedaliero Cantonale (CH), Houston Methodist Research Institute (USA)), Foundations (Fond. IIT, Fond. Grigioni).

Attachment A1 – PhD Programme Coordinator

Raffaele Dellacà is the Chairman (Coordinator) of the PhD Programme in Bioengineering for the period 2025-27. He is Full Professor of Electronic and informatics bioengineering at the Department of Electronic, Information and Biomedical Engineering (DEIB), Politecnico di Milano. He teaches Biomedical Electronics in the MSc programme in Bioengineering and Biomedical Electronics and Instrumentation at the MEDTEC School, a 6-year degree course in Medicine and Biomedical Engineering run by Humanitas University with Politecnico di Milano, and is responsible for the Technologies for Respiration (TechRes) Laboratory. Prof. Dellacà obtained the MSc degree in Control Science Engineering in 1997 and the PhD in Bioengineering in 2001 at Politecnico di Milano.
Raffaele Dellacà main research interests lie in bioengineering of the respiratory system and medical devices, with a particular focus on respiratory physiology, respiratory mechanics, modelling of the respiratory system's mechanical properties, development of new technologies for the analysis of respiration, mechanical ventilation, and anaesthesia in adults and newborns.

In 2005, Raffaele Dellacà became a fellow of the European Respiratory Society (ERS) and was Raine Visiting Professor at the University of Western Australia (Perth, Australia) in 2016. He has acted as principal investigator, co-principal investigator or collaborator on several research projects sponsored by public agencies, foundations and companies. He is the author of more than 150 full papers published in international peer-reviewed journals and has 19 patents, most of them used by commercial companies producing medical devices. He is also a co-founder of Restech s.r.l. (Milan), a spin-off company of the Politecnico di Milano University, which develops and produces innovative devices for lung function tests and is in the scientific advisory board of Spatium Medical, spin-off from Erasmus Medical Center in Rotterdam which is developing novel insufflation technologies for minimally-invasive surgery based on his patents.

Attachment A2 – PhD Faculty Board

PHD BOARD MEMBERS						
	ID Code	**Surname**	**Name**	**Role**	**Afferency**	**SSD**
1	10277651	CANDIANI	GABRIELE	ORDINARIO	CMIC	IBIO-01/A
2	10060777	DRAGHI	LORENZA	ASSOCIATO	CMIC	IMAT-01/A
3	10005765	GIORDANO	CARMEN	ASSOCIATO	CMIC	IBIO-01/A
4	10063428	FARE'	SILVIA	ORDINARIO	CMIC	IBIO-01/A
5	10075559	GASTALDI	DARIO	ASSOCIATO	CMIC	IBIO-01/A
6	10197229	LA BARBERA	LUIGI	ASSOCIATO	CMIC	IBIO-01/A
7	10023084	BOSCHETTI	FEDERICA	ASSOCIATO	CMIC	IBIO-01/A
8	10005762	PETRINI	PAOLA	ASSOCIATO	CMIC	IBIO-01/A
9	10449500	RODRIGUEZ MATAS	JOSE FELIX	ORDINARIO	CMIC	IBIO-01/A
10	10169517	VERGARA	CHRISTIAN	ORDINARIO	CMIC	MATH-05/A
11	10171386	VILLA	TOMASO MARIA TOBIA	ASSOCIATO	CMIC	IBIO-01/A

12	10004799	RAVAZZANI	PAOLO GIUSEPPE	DIRETTORE CNR – DOCENTE A CONTRATTO	CNR	IBIO-01/A
13	10255416	ALIVERTI	ANDREA	ORDINARIO	DEIB	IBIO-01/A
14	10017244	BIANCHI	ANNA MARIA MADDALENA	ORDINARIO	DEIB	IBIO-01/A
15	10276407	PAGANELLI	CHIARA	ASSOCIATO	DEIB	IBIO-01/A
16	10042285	CIMOLIN	VERONICA	ASSOCIATO	DEIB	IBIO-01/A
17	10048033	CORINO	VALENTINA	ASSOCIATO	DEIB	IBIO-01/A
18	10056722	DE MOMI	ELENA	ORDINARIO	DEIB	IBIO-01/A
19	10055614	DELLACA'	RAFFAELE	ORDINARIO	DEIB	IBIO-01/A
20	10065914	FERRARIO	MANUELA	ASSOCIATO	DEIB	IBIO-01/A
21	10067384	FIORE	GIANFRANCO BENIAMINO	ORDINARIO	DEIB	IBIO-01/A
22	10083793	GUAZZONI	CHIARA	ASSOCIATO	DEIB	IINF-01/A
23	10123850	PATTINI	LINDA	ASSOCIATO	DEIB	IBIO-01/A
24	10124646	PEDROCCHI	ALESSANDRA LAURA GIULIA	ORDINARIO	DEIB	IBIO-01/A
25	10001224	POZZI	GIUSEPPE	ASSOCIATO	DEIB	IINF-05/A
26	10136793	RASPONI	MARCO	ORDINARIO	DEIB	IBIO-01/A
27	10154032	SIGNORINI	MARIA GABRIELLA	ORDINARIO	DEIB	IBIO-01/A
28	10155686	SONCINI	MONICA	ASSOCIATO	DEIB	IBIO-01/A
29	10173052	VOTTA	EMILIANO	ASSOCIATO	DEIB	IBIO-01/A
30	10256766	ANDREONI	GIUSEPPE	ORDINARIO	DESIGN	CEAR-08/D

Attachment A3 – PhD Advisory Board

Name	Affiliation
Antiga Luca	Orobix
Bechi Giulia	Fondazione Cariplo
Bottinelli Elena	Gruppo San Donato
Castellano Barbara	Panakes
Chiesi Andrea	Chiesi Farmaceutica
Mainetti Stefano	Polihub
Varinelli Claudio	AB Medica