UNIVERSITÀ DEGLI STUDI
DELL'INSUBRIA

SCHOOL OF MEDICINE

DESCRIPTION OF THE CURRICULUM
(TEACHING REGULATIONS OF THE COURSE))
BACHELOR'S DEGREE COURSE
IN CARDIOCIRCULATORY PATHOPHYSIOLOGY AND CARDIOVASCULAR PERFUSION TECHNIQUES (L/SNT3 Technical health professions)
A.Y. 2025/2026

Art. 1 - General information and organization

The Degree Course in Cardiocirculatory Physiopathology and Cardiovascular Perfusion Techniques It belongs to the Class of technical health professions (L/SNT3) and is activated according to the 2011 teaching regulations approved pursuant to the Interministerial Decree of 19 February 2009.

The Bachelor's Degree in Cardiocirculatory Physiopathology and Cardiovascular Perfusion Techniques is a three-year degree program that qualifies students to practice the profession of Cardiocirculatory Physiopathology and Cardiovascular Perfusion Technician, the profile of which is defined by Ministry of Health Decree No. 746 of September 26, 1994.

The Cardiocirculatory Physiopathology and Cardiovascular Perfusion Technician is the healthcare professional who independently performs the technical procedures required to perform diagnostic methods on biological materials or individuals, ensuring the operation and maintenance of equipment related to extracorporeal circulation techniques and hemodynamic, electrophysiologic, and cardiac pacing techniques.

The School of Medicine (a coordinating body established pursuant to Law 240/2010) is responsible for managing the degree program, coordinating and streamlining the program's teaching activities. The degree program is offered through the collaboration of the Departments of Medicine and Surgery, Medicine and Technological Innovation, and Biotechnology and Life Sciences.

The President of the Degree Course Council is Professor Roberto De Ponti.
The Director of Professional Training Activities is Dr. Assunta D'Alessandro.

The relevant academic office is the School of Medicine Office, which receives appointments via the Microsoft Teams platform and responds to emails received via INFOSTUDENTI . The web application provides a communication channel with various University offices (including Student Offices, Integrated Student Services – Right to Education, Orientation and Placement Services, and Academic Offices) and is available to students and external users. This system allows you to submit questions and receive responses, attach documents, and track the status of your request.

Art. 2 - Admission to the study program

Admission requirements and access methods

To be admitted to the degree program, students must possess a high school diploma or other qualification obtained abroad, deemed suitable under current legislation. Students must also possess or have acquired adequate initial preparation, as required by current regulations regarding admission to courses with limited enrollment at the national level. The maximum number of places for admission to the first year of the program, appropriate to the University's teaching potential and current regulations, is established annually by the Ministry. Similarly, the Ministry defines the timing, methods, and content of the exam through a specific ministerial decree. All information required for the admission exam is provided in the call for applications announcement,

published on the University website on the page dedicated to limited admissions to the Healthcare Professions .

Students who pass the admission test and rank highly within the maximum number of places established by the Ministry may enroll in the degree course.

Initial preparation verification methods

As required by current legislation, the admission test, whose content is identical throughout the country, is designed to verify adequate entry-level knowledge. Students who, despite passing the test, achieve a score lower than 3 in the Chemistry questions and 3 in the Physics and Mathematics questions will be subject to specific Additional Learning Obligations (OFA), which must be completed within the first year of the course.

Students with OFA requirements must complete an e-learning remedial course to complete their initial preparation. Chemistry faculty are available to provide further information and clarification. At the end of the course, there will be a remedial exam. The assignment of OFA requirements, how to complete them, and the dates of the remedial exam are communicated to students through the institutional channels available to the Degree Programme (website, student email, and exam noticeboard). The OFA requirements are considered fulfilled once the OFA remedial exam has been successfully passed.

Art. 3 - Transfer procedures from other degree courses

Recognition of previous careers

Students from other degree programs who have successfully passed the limited-access admission test may submit a specific request for recognition of previous academic achievement to the Student Administration Office, along with their application for enrollment in the degree programme. This request must specify the activities for which they wish to have recognition. For further details on submitting an application for recognition of previous academic achievement, please refer to the School of Medicine's degree program webpage.

Applications for admission to years subsequent to the first

Applications for admission to years after the first, following a request for authorization, are accepted for vacant positions in individual years of the program. For further information on the deadlines, criteria, and evaluation methods for applications, please refer to the Rector's Decree published annually on the University website. A special commission, appointed by the Degree Programme, examines the student's academic record and proposes the ranking of those admitted to years after the first for approval by the Degree Programme Council.

Art. 4 - Simultaneous enrollment in two study programs

Pursuant to Law No. 33 of April 12, 2022, *"Provisions regarding simultaneous enrollment in two higher education programs"* and subsequent Ministerial Decrees 930/2022 and 933/2022, students are permitted to simultaneously enroll in two programs. Requests for dual enrollment will be evaluated by a dedicated program committee, after verifying admission requirements.

Art. 5 - The educational path

The study plan for the Degree Course in Cardiocirculatory Physiopathology and Cardiovascular Perfusion Techniques, or CdS, comprises mandatory training activities worth 180 credits, of which 60 credits are dedicated entirely to professional internship activities and 6 credits for activities chosen by the student as part of the Elective Teaching Activities (Italian acronym ADE).

Teaching is conducted conventionally, and therefore the degree program is taught entirely in person. For activities other than practical and laboratory work, limited online teaching may be provided, up to a third of the total.

Attendance is mandatory; to take the exam or qualify, students must demonstrate attendance of at least 75% of the total hours scheduled for each integrated or single-subject course.
It is the responsibility of individual instructors to verify this, as they deem appropriate. At the end of the teaching activities, the instructor in charge of the course is required to communicate to the Student Affairs Office any list of students who have not received a certificate of attendance. The Student Affairs Office, unless otherwise communicated by the instructors, will assign the certificate of attendance to the students' academic records.
Elective educational activities (ADE), professional and in-depth activities and professional workshops require 100% attendance of the planned hours.

The internship must be completed 100%, with the possibility of recovery in the event of justified absences.

The University Educational Credit (CFU) is a measure of the amount of learning, including individual study, required of a student with adequate initial preparation to acquire knowledge and skills in the learning activities required by the degree program regulations, as indicated in Article 5 of Ministerial Decree 270/04.

Each training activity (teaching, laboratory, internship or thesis, etc.) of the degree courses corresponds to a specific whole number of training credits (CFU).

Each CFU corresponds to 25 hours of student commitment, including hours of training activities in the presence of the teacher, and hours of independent study and personal reworking, necessary to complete the training.

The credits corresponding to each training activity are acquired by the student after passing the proficiency exam or other form of proficiency assessment established in the course's teaching regulations.

Teaching methods adopted for the delivery of training activities

Face-to-face lessons: (up to a maximum of 12 hours/CFU)
It is the main and fundamental activity of teaching, the student attends the lesson given by the teacher and independently processes the content heard.

Exercises: (up to a maximum of 15 hours/CFU)

This activity allows us to clarify lesson content through the development of applications. No content is added to the lessons; they are associated with the lessons and do not exist independently.

Laboratory: (up to a maximum of 20 hours/CFU) *seminars:* (up to a maximum of 20 hours/CFU) Lessons taught by experts and professionals from the academic, business, and institutional worlds, using a practical in-depth methodology and active, participatory student organization.

Visits/Study Trips: activities in the presence of the student, coordinated and managed by teachers, in a production or research context, for the purpose of study and implementation of knowledge.

Apprenticeship (up to a maximum of 25 hours/CFU): For the Degree Programme in Cardiocirculatory Pathophysiology and Cardiovascular Perfusion Techniques, curricular internships are available at the University and at affiliated facilities under the supervision of the Director of Professional Education. Professional internships must be completed exclusively at the training center, under the supervision of tutors designated by the degree program. The personalized relationship between student and tutor, and the availability of high-quality and quantitatively significant equipment, make practical work the program's strength.

Methods of verifying training activities

The assessment methods for training activities, detailed in the course syllabuses, may be written or oral and may include ongoing activities.

To take exams and other assessment tests, students must be up-to-date with their tuition and fees, have passed any preparatory exams, have attended classes, and have all required attendance certificates. Registration for exams or assessment tests is completed exclusively online. Upon online registration, the information system checks the student's academic record to ensure that their exam registration matches their study plan.

Propaedeutics:

For the purposes of admission to the course exams, students are required to comply with the following mandatory requirements:

MUST BE TAKEN:	**BEFORE TAKING THE INTEGRATED COURSE OF:**
FUNDAMENTALS MORPHOLOGICAL FROM THE LIFE	FUNDAMENTALS PATHOPHYSIOLOGICAL FROM THE LIFE
PATHOPHYSIOLOGICAL FOUNDATIONS OF LIFE	PATHOPHYSIOLOGY OF CIRCULATION EXTRACORPOREAL
PATHOPHYSIOLOGY OF EXTRACORPOREAL CIRCULATION	EXTRACORPOREAL CIRCULATION

EXTRACORPOREAL CIRCULATION	SPECIALIST CARDIAC SURGERY
PROFESSIONAL INTERNSHIP 1	PROFESSIONAL INTERNSHIP 2
PROFESSIONAL INTERNSHIP 2	PROFESSIONAL INTERNSHIP 3

RECOMMENDED PREREQUISITES

To support and guide students in choosing the priorities to address, we recommend that they follow the following prerequisites, which in no way constitute a binding obligation on their continued studies:

PASS THE INTEGRATED COURSE OF:	**BEFORE TAKING THE INTEGRATED COURSE OF:**
PATHOPHYSIOLOGICAL FOUNDATIONS OF LIFE	PROFESSIONAL INTERNSHIP 1
EXTRACORPOREAL CIRCULATION	PROFESSIONAL INTERNSHIP 2
SPECIALIST CARDIAC SURGERY	PROFESSIONAL INTERNSHIP 3

Passing the professional internship exam each year is a prerequisite for attending the professional internship the following year. Students who fail the internship exam will be required to repeat the entire internship or the internship experience in which they failed to complete any gaps.

Art. 6 - Graduation exams

To be admitted to the final exam, students must have earned all the credits for the educational activities planned in the study plan and required by the academic regulations, and have passed all the exams and qualifications, including those relating to the internship.

The final exam examination committee is composed of the President of the Degree Course; four Degree Course professors; two representatives of the professional register (pursuant to Law 3 January 2018); a representative of the Ministry of Health and a representative of the MUR.

The final exam (6 CFU) with the value of a state exam qualifying for the practice of the profession of Cardiocirculatory Physiopathology and Cardiovascular Perfusion Technician organized, according to the note from the Minister of University and Research in agreement with the Minister of Labor, Health and Social Policies (19/01/12), consists of two sessions, with related assessments, defined at national level:

- **practical test:** carried out in the laboratories where the professional training was carried out during the course: cardiac surgery operating room, echocardiography, electrostimulation and electrophysiology.
- Writing and dissertation of a **thesis**: the writing of the thesis and its dissertation must focus on the specific activities of the profession of Cardiocirculatory Physiopathology and Cardiovascular Perfusion Technician.

The thesis must assess the student's ability to conduct methodologically rigorous design and research. Both parts will be evaluated equally, but up to 5 points will be awarded for the experimental thesis and up to 3 points for the compilation thesis. Failure to pass the practical exam will result in the exam being discontinued and the student will be deemed to have failed. The maximum score for both exams will be 10 points.

Honors may be awarded to candidates who achieve a score of 110 and have earned at least 3 honors during their training, or alternatively, have achieved a final score of higher than 110/110. The tests must enable the candidate to demonstrate that they have acquired the knowledge and practical and technical skills required for the operational context envisaged by the professional profile of Cardiocirculatory Physiopathology and Cardiovascular Perfusion Technician.

Upon graduation, a Diploma Supplement is issued. This informative report accompanies the official qualification and describes the nature, level, context, content, and status of the studies undertaken and completed by the student. It is issued in both Italian and English. The purpose of the document is to provide independent data for the international transparency of qualifications (diplomas, degrees, certificates, etc.) and to enable equitable academic and professional recognition, promoting student mobility. The Diploma Supplement complies with the Europass standard.

ATTACHMENTS

Annex 1 – Study Plan

Annex 1 – Study Plan

SCHEDULED TEACHING - 2025/2026 COHORT

Scheduled teaching refers to the set of courses planned for the entire study program, which must be taken by all students enrolling in the current academic year (enrollment cohort) in order to complete their studies and obtain their qualification.

1st YEAR								
SEM	**Name of INTEGRATED COURSE/SUBJECT**	**SUBJECT**	**SSD**	**DISCIPLINARY AREA/TAF**	**HOURS**	**ECTS-C**	**TOTAL CFU**	**VERIFICATION METHOD ***
1	**SCIENCE PHYSICS ANDSTATISTICS part 1**	PHYSICS APPLIED TO MEDICINE	FIS/07	Science Propaedeutics /A1	24	2	6	V
		STATISTICS APPLIED TO MEDICINE	MED/01	Science Propaedeutics /A1	~~20~~ 16	2		
		INFORMATICS	INF/01	Science Propaedeutics /A1	20	2		
1	**SCIENCE BIOMEDICAL**	CHEMISTRY AND BIOCHEMISTRY	BIO/10	Biomedical science /A2	40	3	6	V
		GENERAL BIOLOGY ANDGENETICS APPLIED TO MEDICINE	MED/03	Biomedical science /A2	24	2		
		GENERAL MICROBIOLOGY	MED/07	Biomedical science /A2	12	1		
1	**FUNDAMENTALS MORPHOLOGICAL OF THELIFE**	HUMAN ANATOMY	BIO/16	Biomedical science /A2	36	2	3	V
		HISTOLOGY	BIO/17	Biomedical Science /A2	12	1		
1	**HISTORICAL PRINCIPLES AND PSYCHOLOGICAL AND OF MEDICINE**	HISTORY OF MEDICINE	MED/02	Human and psychopedagogical science /B5	12	1	3	V
		GENERAL PSYCHOLOGY	M-PSI/01	Human and psychopedagogical science /B5	24	2		
2	**FUNDAMENTALS PATHOPHYSIOLOGICAL FROM THE LIFE**	HUMAN PHYSIOLOGY	BIO/09	Biomedical science /A2	30	2	5	V
		GENERAL PATHOLOGY	MED/04	Biomedical science /A2	20	2		
			MED/05	Science medical- surgical /B2	16	1		
2	**SAFETY AND HYGIENE IN THE ENVIRONMENTS OF WORK**	GENERAL HYGIENE	MED/42	Science of prevention in sanitary services /B3	24	2	6	V
		OCCUPATIONAL MEDICINE	MED/44	Science of prevention in sanitary services /B3	12	1		
		INFECTIVE DISEASES	MED/17	Science medical- surgical /B2	12	1		
		PRINCIPLES OF ASSISTANCENURSING	MED/45	First aid /A3	12	1		

		RADIAPROTECTION	MED/36	Similar or integrative formative activity /C	12	1		
A	**PATHOPHYSIOLOGY FROM THE CIRCULATION EXTRACORPOREAL**	SCIENCE AND TECHNOLOGYOF THE MATERIALS	ING-IND/22	Sciences and techniques of cardiovascular physiopathology and cardiovascular perfusion /B1	30	2	8	V
		ELECTRIC AND ELECTRONICS MEASURES	ING-INF/07	Science Propaedeutics /A1	24	2		
			ING-INF/05	Science interdisciplinary clinics /B4				
		METHODS AND TECHNIQUES OF EXTRACORPOREAL CIRCULATION	MED/50	Sciences and techniques of cardiovascular physiopathology andperfusion cardiovascular /B1	30	2		
		ANATOMY CHARACTERISTIC	BIO/16	Biomedical science /A2	20	1		
		PATHOPHYSIOLOGY OF THE CARDIAC OPERABLE DISEASE	MED/23	Sciences and techniques of cardiovascular physiopathology andperfusion cardiovascular /B1	16	1		
1	**ENGLISH**	ENGLISH	L-LIN/12	Foreigner language/E2	36	3	3	I
A	**LABORATORY PROFESSIONAL 1**	PROFESSIONAL LABORATORY 1	MED/50	Further activity formative /F2	20	1	1	I
A	**EDUCATIONAL ACTIVITIESELECTIVE 1**	ELECTIVE LEARNING ACTIVITIS 1	//	Student's choice /D	//	2	2	F
A	**APPRENTICESHIP PROFESSIONALIZING TEA 1**	PROFESSIONAL APPRENTICESHIP 1	MED/50	Apprenticeship /B8	375	15	15	V

2nd YEAR

SEM	Name of INTEGRATED COURSE/SUBJECT	SUBJECT	SSD	DISCIPLINARY AREA/TAF	HOURS	ECTS-C	TOTAL CFU	VERIFICATION METHOD *
1	**ANESTHESIOLOGY AND PHARMACOLOGY**	GENERAL ANESTHESIOLOGY AND EMERGENCIESDOCTOR SURGICAL	MED/41	First aid /A3	24	2	5	V
			MED/41	Further activity formative /F1	12	1		
		PHARMACOLOGY	BIO/14	First aid /A3	24	2		
1	**ILLNESSES CARDIOVASCULAR**	PATHOPHYSIOLOGY OF THE CARDIOVASCULAR SYSTEM	MED/11	Sciences and techniques of cardiovascular physiopathology andperfusion cardiovascular /B1	24	2	7	V
		ELECTROCARDIOGRAPHY,ARRHYTHMOLOGY AND CARDIAC PACING	MED/11	Sciences and techniques of cardiovascular physiopathology andperfusion cardiovascular /B1	24	2		
		TECHNIQUES APPLIED TO ELECTROPHYSIOLOGY	MED/50	Sciences and techniques of pathophysiology cardiovascular And perfusion cardiovascular /B1	24	2		
		PATHOLOGY	MED/08	Science medical- surgical /B2	12	1		
		PATHOPHYSIOLOGY OF THE RESPIRATORY SYSTEM	MED/10	Science interdisciplinary clinics /B4	24	2		

1	**PNEUMOLOGY AND PATHOLOGY PULMONARY**	THORACIC SURGERY	MED/21	Sciences and techniques of cardiovascular physiopathology andperfusion cardiovascular /B1	24	2	6	V
		METHODS AND DIAGNOSTIC TECHNIQUES IN PNEUMOLOGY	MED/10	Science interdisciplinary clinics /B4	24	2		
2	**DIAGNOSTICS CARDIOVASCULAR**	VASCULAR SURGERY	MED/22	Sciences and techniques of cardiovascular physiopathology andperfusion cardiovascular /B1	20	2	9	V
		CARDIOVASCULAR IMAGING	MED/36	Science of prevention in sanitary services /B3	24	2		
		DIAGNOSTICS AND INVASIVE CARDIOVASCULAR PROCEDURES	MED/11	Sciences and techniques of cardiovascular physiopathology andperfusion cardiovascular /B1	24	2		
		NURSING IN INVASIVE PROCEDURES	MED/45	Further activity formative /F1	12	1		
		METHODS AND TECHNIQUES IN HEMODYNAMICS	MED/50	Sciences and techniques of cardiovascular physiopathology andperfusion cardiovascular /B1	20	2		
A	**CLINICAL MEDICINE ANDSPECIALIST**	NEPHROLOGY	MED/14	Science interdisciplinary clinics /B4	20	2	8	V
		HEMATOLOGY	MED/15	Sciences and techniques of cardiovascular physiopathology andperfusion cardiovascular /B1	24	2		
		GENERAL MEDICINE ANDONCOLOGY	MED/06	Science interdisciplinary clinics /B4	10	1		
		EXTRACORPORAL TECHNIQUES IN ONCOLOGY	MED/50	Sciences and techniques of cardiovascular physiopathology andperfusion cardiovascular /B1	12	1		
		ANESTHESIOLOGY IN CARDIAC SURGERY	MED/41	Science interdisciplinary clinics /B4	24	2		
2	**ENGLISH SCIENTIFIC**	SCIENTIFIC ENGLISH	L-LIN12	Further activity formative /F1	12	1	1	I
A	**CIRCULATION EXTRACORPOREAL**	CARDIAC SURGERY	MED/23	Sciences and techniques of cardiovascular physiopathology and cardiovascular perfusion/B1	~~24~~ 20	2	6	V
		METHODS AND TECHNIQUES OF EXTRACORPOREAL CIRCULATION 1	MED/50	Sciences and techniques of cardiovascular physiopathology and cardiovascular perfusion/B1	30	2		
		METHODS AND TECHNIQUES OF EXTRACORPOREAL CIRCULATION 2	MED/50	Sciences and techniques of cardiovascular physiopathology and cardiovascular perfusion/B1	24	2		
2	**SCIENCE PHYSICS ANDSTATISTICS Part 2**	STATISTICS AND RESEARCH METHODOLOGY	MED/01	Propaedeutics sciences / A 1	~~12~~ 16	1	2	V
		APPLIED COMPUTER SCIENCE	ING-INF/05	Science interdisciplinary /B6	12	1		

A	**LABORATORY PROFESSIONAL 2**	PROFESSIONALAB ORATORY L 2	MED/50	Further activity formative /F2	20	1	1	I
A	**EDUCATIONAL ACTIVITIESELECTIVE 2**	ELECTIVE LEARNING ACTIVITIES 2	//	Student's choice /D	//	2	2	F
A	**APPRENTICESHIP PROFESSIONALIZING TEA 2**	PROFESSIONAL APPRENTICESHIP 2	MED/50	Apprenticeship /B8	425	17	17	V

3rd YEAR

SEM	Name of NTEGRATED COURSE/SUBJECT	SUBJECT	SSD	DISCIPLINARY AREA/TAF	HOURS	ECTS-C	TOTAL CFU	VERIFICATIO METHOD *
1	**RIGHT AND ORGANIZATIONOF THE SERVICES SANITARY WARE**	EMPLOYMENT LAW	IUS / 07	Sciences of management in health care /B7	12	1	3	I
		CORPORATE ECONOMY	SECS-P / 07	Management Sciences health care /B7	12	1		
		CORPORATE ORGANIZATION	SECS-P / 10	Management Sciences health care /B7	12	1		
1	**PRINCIPLES ETHICAL ANDLEGAL**	BIOETHICS AND ANTHROPOLOGY	MED/43	Science of prevention of the services sanitary ware /B3	12	1	3	V
		FORENSIC MEDICINE	MED/43	Science of prevention in sanitary services /B3	12	1		
		PROFESSIONAL DEONTOLOGY	MED/02	Science human psycho-pedagogical /B5	12	1		
A	**IMAGINING CARDIOTHORACIC ANDSONOGRAPHY CARDIOVASCOLARE**	ECHOCARDIOGRAPHY	MED/11	Science and technique della cardiovascular physiopathology andperfusion cardiovascular /B1	36	3	5	V
		METHODS AND TECHNIQUES OF ECHOCARDIOGRAPHY	MED/50	Sciences and techniques of cardiovascular physiopathology andperfusion cardiovascular /B1	24	2		
A	**SURGERY CARDIAC SPECIALIST**	CARDIOVASCULAR ASSISTANCE DEVICES	MED/23	Science And techniques from the cardiovascular physiopathology andperfusion cardiovascular /B1	14	1	8	V
		TECHNIQUES OF PEDIATRIC CARDIAC SURGERY	MED/23	Sciences and techniques of cardiovascular physiopathology andperfusion cardiovascular /B1	24	2		
		INNOVATIVE CARDIAC SURGERY	MED/23	Sciences and techniques of cardiovascular physiopathology andperfusion cardiovascular /B1	16	1		
		SCIENCE TECHNIQUES	MED/50	Sciences and techniques of cardiovascular physiopathology andperfusion cardiovascular /B1	36	3		
A	**LABORATORY PROFESSIONAL 3**	PROFESSIONAL LABORATORY 3	MED/50	Further activity formative /F2	20	1	1	I
A	**SEMINARS MULTIDISCIPLINAR YFOR INSIGHTS SPECIFIC**	MULTIDISCIPLINARY SEMINARS	MED/50	Further activity formative /F1	60	3	1	I

A	**EDUCATIONAL ACTIVITIESELECTIVE 3**	ELECTIVE LEARNING ACTIVITIES 3	/ /	Student's choice /D	/ /	2	2	F
A	**APPRENTICESHIP PROFESSIONALIZING TEA 3**	PROFESSIONAL APPRENTICESHIP 3	MED/50	Apprenticeship /B8	700	28	28	V
A	**TRIAL FINAL**	FINAL EXAM	/ /	Final exam /E1	/ /	6	/ /	/ /

* G – JUDGMENT V – EXAM I – FITNESS' F – FREQUENCY