UNIVERSITA' DEGLI STUDI DI MILANO
PROGRAMME DESCRIPTION - ACADEMIC YEAR 2025/26
BACHELOR
Orthopaedics Techniques (Classe L/SNT3)
Enrolled since 2011/12 Academic Year

HEADING	
Degree classification - Denomination and code:	L/SNT3 Health professions for technical assistance
Degree title:	Dottore
Length of course:	3 years
Total number of credits required to complete programme:	180
Years of course currently available:	1st , 2nd , 3rd
Access procedures:	Cap on student, student selection based on entrance test
Course code:	D88

PERSONS/ROLES

Head of Interdepartmental Study Programme

Prof. Costantino Corradini

Tutors - Faculty

Per l'orientamento:
prof. Matteo Parrini
prof.ssa Jeannette Majer

Degree Course website

https://tecnicheortopediche.cdl.unimi.it/it

CHARACTERISTICS OF DEGREE PROGRAMME

General and specific learning objectives

The Bachelor's degree programme in Orthopaedics Techniques (degree class L/SNT3 - Health professions for technical assistance) has a three-year duration.

Listed below are the learning objectives of the degree programme, which adhere to the guidelines set by the European Union. Upon achieving these learning objectives, graduates will be fully equipped to pursue a Master's degree in the healthcare disciplines, or another graduate programme offered by one of the Departments grouped under the Faculty of Medicine.
Graduates in Orthopaedics Techniques should be able to:
- identify, prevent and respond to various risks (and correlated critical events) in the orthopaedics laboratory;
- demonstrate knowledge of the Italian legislation governing technical professions in healthcare, lab activities, medical and surgical devices and public health;
- assess the reliability of pre-analytical, analytical and productive processes, by applying their knowledge of biological, physiological and pathological phenomena;
- have a dynamic understanding of concepts such as automation, informatisation and communication;
- apply their knowledge of scientific progress to improve the effectiveness and efficiency of analytical and production processes;
- participate in planning and organisation processes (including cost analysis) for the introduction of new materials and technologies, or identify and anticipate factors that may affect the quality of information and production processes;
- verify the correct functioning and efficiency of machinery through functional tests, calibration and preventive maintenance, as well as extraordinary maintenance in the event of malfunctions;
- assess and verify the safety of any devices manufactured, supplied or customised by them;
- draft and define technical specifications;
- manufacture, assemble, modify and customise medical devices for the human body and the locomotor system in particular, including but not limited to orthoses, prostheses, technical aids, postural supports and other corrective, compensatory, palliative, retentive, position, functional and compression devices;
- verify the clinical/morphological suitability and technical/functional usability of the device in question (whereas any assessment on its therapeutic/rehabilitative effectiveness should be left to the professional who prescribed the device);
- supply manufactured and customised medical devices;
- verify the compliance and safety of devices, and sign certificates of conformity as prescribed by the law;

- oversee the quality of production processes and protocols;
- take all necessary actions to manage risks and guarantee the efficiency of any devices manufactured or commissioned, including by recalling products and planning technical assistance protocols;
- provide (or manage the provision of) technical assistance on medical devices manufactured or supplied by them;
- follow up and monitor the efficiency of devices already in use, highlighting cases where the device is no longer safe or coherent with the target treatment, with a view to proposing repairs or a replacement of the device itself;
- comply with ethics principles and rules of conduct applicable to orthopaedic technicians in the technical and manufacturing settings contemplated by the study plan;
- recognise their own role and area of competence and respect those of other healthcare professionals, adopting a collaborative approach;
- interact and collaborate proactively with interprofessional teams in order to plan and manage manufacturing activities, including decentralised activities;
- use information systems and IT systems when communicating with healthcare professionals, suppliers and end users;
- learn the basics of research methodology and apply the results of technical/methodological research to improve the quality of methods;
- know the principles of economic analysis and the basics of public economics and business economics;
- know the essentials of human resource management, with particular regard to HR management issues in the healthcare sector;
- demonstrate adequate proficiency (written and spoken) in at least another language of the European Union, in addition to Italian;
- demonstrate computer literacy skills enabling them to use IT systems and self-learning resources.

Expected learning outcomes

Graduates in Orthopaedics techniques are also expected to have knowledge of the following:
- the biological organisation of organisms;
- the microscopic and macroscopic morphological and structural features of human cells, tissues, organs and systems;
- the functioning mechanisms of human organs and systems, and the molecular and biochemical mechanisms that regulate life processes and related metabolic activities;
- the physiological and pathological processes correlated with health and illness, in patients of various ages;
- the notions of physics and statistics necessary to understand and interpret biomedical phenomena;
- the most common pathological phenomena pertaining to various clinical and surgical specialisms;
- possible sector-specific intervention fields;
- the basic principles of intervention techniques;
- the principles guiding decision-making processes;
- the most common problems experienced by patients, with particular regard to prevention, treatment and rehabilitation aspects, as well as palliative care;
- the fundamentals of diagnostic imaging and radiation methods;
- the organisational complexity of the healthcare system;
- the importance of complying with laws and regulations when providing services and collaborating with other professionals;
- the ethical implications of working as an orthopaedic technician;
- the fundamentals needed to become an autonomous professional;
- risk factors, individual and collective prevention strategies, and interventions aimed at enhancing the safety of workers and users;
- the rules on radiation protection laid down by EU directives;
- software packages that can be used for self-learning, or to consult data and collaborate with other healthcare professionals.

Professional profile and employment opportunities

The Orthopaedic Technician is a healthcare worker who, pursuant to a medical prescription, and subsequent review, constructs/adapts, applies and supplies prostheses, orthotics, and aids to substitute, correct, and support the motor apparatus, both of a functional and aesthetic nature, either mechanical or using external energy, or mixed corporeal and external energy, through direct testing of measurements and models on the patient.

Within the scope of one’s own expertise, the Orthopaedic Technician trains the disabled person to use the prosthesis and orthotics as supplied, carries out, in cooperation with the physician, technical care for the delivery, replacement, and repair of prostheses and orthotics with which the patient has been provided, liaises with other professional figures and the multi-disciplinary treatment contemplated in the rehabilitation plan, and is responsible for organising, planning, and the quality of the professional acts conducted within the scope of one's professional duties.

The Orthopaedic Technician conducts professional activities in public or private hospitals and clinics, whether as an employee or as an independent contractor.

Initial knowledge required

To be admitted into the degree programme, a candidate must have an Italian secondary-school diploma or similar diploma obtained overseas and deemed equivalent.

Admission into the programme is capped, at a national level, pursuant to Law no. 264 of 2 August 1999.

The number of students who may be admitted is set each year pursuant to a decree of the Ministry of Universities and Research (MUR), based on findings provided by the university in terms of available instructional, classroom, and clinical resources (human and otherwise), as well as the demand for the type of professionals contemplated for this Class as

determined by the Region of Lombardy, and the Ministry of Health.
The admission test will be administered as a national exam, generally in the month of September. The date will be set pursuant to a decree of MUR.

Additional learning requirements (OFA)
Students who answered less than 50% of the Biology and Chemistry questions on the admission test will be required to finish a set of additional learning requirements (OFA). These prerequisites may be met through specifically assigned remedial work. Any failure to complete the OFA will make it impossible for the student to sit the exam in: Microbiology and pathology and biochemistry.
Timely notice of the various courses will be posted to: https://tecnicheortopediche.cdl.unimi.it/it

Compulsory attendance

Attendance of all educational activities contemplated in the study programme is mandatory.
To be allowed to sit the for-credit exam, students must have attended at least 75% of the educational programming contemplated for each course.

Degree programme final exams

Degrees in Orthopaedics Techniques are awarded at the end of three years of study once a student has passed all relevant exams, including the English-language proficiency examination, for a total of 173 CFU, as well as a final theoretical/practical exam worth 7 CFU, for a total of 180 CFU.
The final exam consists of presenting and discussing a written thesis.
The final examination acts as a State Exam which serves to license students to practice the profession.

EXPERIENCE OF STUDY ABROAD AS PART OF THE TRAINING PROGRAM

The University of Milan supports international mobility by providing its students with the opportunity to spend study and internship periods abroad. It is a unique chance to enrich your educational path in a new exciting environment.
The agreements entered into by the University with over 300 universities from the 27 EU member countries under the European Erasmus+ programme allow regularly enrolled students to carry out part of their studies at one of the partner universities or to undertake internships at companies, training and research centres and other organisations.
Similar international mobility opportunities are provided outside Europe, through agreements with a number of prestigious institutions.
The University of Milan is a member of the 4EU+ European University Alliance that brings together eight public multidisciplinary universities: University of Milan, Charles University of Prague, Heidelberg University, Paris-Panthéon-Assas University, Sorbonne University of Paris, University of Copenhagen, University of Geneva, and University of Warsaw. The 4EU+ Alliance offers integrated educational pathways and programmes to promote the international mobility of students (physical, blended and virtual).

How to participate in Erasmus mobility programs

The students of the University of Milan can participate in mobility programmes, through a public selection procedure.
Ad hoc commissions will evaluate:
- Academic career
- the candidate's proposed study programme abroad
- his/her foreign language proficiency
- the reasons behind his/her application

Call for applications and informative meetings
The public selection for Erasmus+ mobility for study generally begins around February each year with the publication of a call for applications specifying destinations and requirements. Regarding the Erasmus+ Mobility for Traineeship, the University of Milan usually publishes two calls a year enabling students to choose a destination defined by an inter-institutional agreement or to find a traineeship position on their own.

The University organises informative meetings to illustrate mobility opportunities and rules for participation.

Erasmus+ scholarship
The European Union grants the winners of the Erasmus+ programme selection a scholarship to contribute to their mobility costs, which may be supplemented by the University funding for disadvantaged students.

Language courses
Students who pass the selections for mobility programmes can benefit from intensive foreign language courses offered each year by the University Language Centre (SLAM).
https://www.unimi.it/en/node/8/

Learn more at https://www.unimi.it/en/node/274/

For assistance, please contact:
International Mobility Office
Via Santa Sofia 9 (second floor)
Tel. 02 503 13501-12589-13495-13502
Contacts: InformaStudenti;
Student Desk booking through InformaStudenti

1st COURSE YEAR Core/compulsory courses/activities common			
Learning activity		**Ects**	**Sector**
anatomy		4	(1) BIO/17, (3) BIO/16
applied medical and technical sciences 1		7	(5) MED/50, (1) MED/33, (1) MED/34
basic human physiology and psychology		5	(3) BIO/09, (2) M-PSI/01
Computer Science Course		3	INF/01
English assessment B1 (2 ECTS)		2	ND
internal medicine		6	(1) MED/38, (1) MED/13, (1) MED/28, (1) MED/15, (1) MED/10, (1) MED/16
microbiology, pathology and biochemistry		5	(2) MED/04, (2) MED/07, (1) BIO/12
physics and mathematics		8	(2) MED/01, (2) ING-INF/07, (2) FIS/07, (2) MAT/05
seminars (first year)		1	ND
Traineeship (first year)		14	MED/50
	Total compulsory credits	55	
Elective courses			
2nd COURSE YEAR Core/compulsory courses/activities common			
Learning activity		**Ects**	**Sector**
applied medical and technical sciences 2		8	(5) MED/50, (2) MED/33, (1) MED/34
bone and joint medicine and surgery 1		10	(4) MED/33, (4) MED/34, (2) MED/36
bone and joint medicine and surgery 2		7	(4) MED/33, (3) MED/34
interdisciplinary sciences and health management		5	(1) SECS-S/02, (2) ING-INF/05, (1) IUS/07, (1) SECS-P/10
medicine and surgery		6	(1) MED/40, (2) MED/09, (1) BIO/14, (1) MED/18, (1) MED/41
seminars (second year)		1	ND
Traineeship (second year)		21	MED/50
	Total compulsory credits	58	
Elective courses			
3rd COURSE YEAR Core/compulsory courses/activities common			
Learning activity		**Ects**	**Sector**
applied medical and technical sciences 3		8	(5) MED/50, (1) MED/33, (1) MED/09, (1) MED/34
bone and joint medicine and surgery 3		8	(4) MED/33, (4) MED/34
clinical sciences		9	(1) MED/39, (2) MED/27, (1) MED/22, (1) MED/30, (1) MED/26, (1) MED/24, (2) MED/19
seminars (third year)		1	ND
technical laboratories		3	MED/50
Traineeship (third year)		25	MED/50
	Total compulsory credits	54	
End of course requirements			
final examination		7	NA
	Total compulsory credits	7	