UNIVERSITA' DEGLI STUDI DI MILANO
PROGRAMME DESCRIPTION - ACADEMIC YEAR 2025/26
BACHELOR
Imaging and Radiotherapy 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:	D75

PERSONS/ROLES

Head of Interdepartmental Study Programme

Prof. Angelo Vanzulli

Tutors - Faculty

Per l'orientamento:
prof.ssa Camilla Tincati

Per la mobilità internazionale e l'Erasmus:
dott. Andrea Masperi
dott.ssa Paola Bizzarri

Per stage e tirocini:
dott. Andrea Masperi
dott.ssa Paola Bizzarri

Per laboratori e altre attività:
dott. Andrea Masperi
dott.ssa Paola Bizzarri

Per tesi di laurea:
dott. Andrea Masperi
dott.ssa Paola Bizzarri

Degree Course website

https://trm.cdl.unimi.it/it

Dott. Andrea Masperi - Polo didattico IEO - via Dei Missaglia, 97 - Palazzo B2 - 7° piano

Academic Office for the Degree Programme

Email: laurea.tecnici@ieo.it

CHARACTERISTICS OF DEGREE PROGRAMME

General and specific learning objectives

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

By the end of the programme, students are expected to have developed:
1) a good grounding in preparatory disciplines (physics, mathematics, computer science, statistics and electronics) and life sciences (biochemistry, biology, human anatomy, physiology, pathology);
2) mastery of the core knowledge and skills required to work as a radiology technician, as per Ministerial Decree no. 746 of 26 September 1994 (radiobiology and radiation protection, equipment and techniques used in diagnostic imaging and radiotherapy, techniques for processing and storing images);

3) methodological skills for the development of care plans (in order to participate in the planning phase of the nursing process);
4) the ability to immediately intervene in clinical emergencies, or in the event of catastrophes or natural disasters, by providing the necessary first-aid measures within their sphere of competence, in order to ensure survival and the best possible assistance;
5) in-depth knowledge of infection prevention and control techniques;
6) familiarity with labour and health legislation concerning radiology technicians;
7) familiarity with related human sciences, healthcare management and other interdisciplinary sciences;
8) familiarity with the scientific method and ability to apply it to practical situations, combined with adequate knowledge of laws and regulations concerning deontology and bioethics, and the related issues;
9) the ability to understand and interact with patients, colleagues and other medical and non-medical professionals;
10) the ability to work in team as well as independently, and to smoothly integrate into a new workplace;
11) the ability to use methods and tools for quality control, assessment and review;
12) with regard to radiation exposure, the ability to assess compliance with the principles of justification, optimisation and dose limitation established by the EU legal framework on radiation protection;
13) the ability to participate in various continuing professional development activities, as well as in research projects regarding different applications of diagnostic imaging and radiation therapy;
14) the ability to use at least one language of the European Union, in addition to Italian, in their area of expertise and to exchange general information;
15) adequate communication skills and proficiency in the use of information management tools;
16) the ability to write technical and scientific reports.

The first part of the study programme focuses on preparatory disciplines and biomedical sciences, to enable students to improve their knowledge base while reinforcing their communication skills (in terms of foreign language proficiency and computer literacy).
At this stage, they learn the theoretical and methodological foundations of working as a radiology technician, and practice some job-specific tasks during the first part of the internship.
Subsequently, students move on to pre-clinical and clinical disciplines inherent to the degree.
Notably, they delve into job-specific topics, such as equipment and techniques used in diagnostic imaging, radiotherapy and health physics (conventional and digital radiology, computed tomography, MRI, scintigraphy, positron emission tomography, linear accelerators, radioactive source carriers, clinical, instrumental and environmental dosimetry), as well as image processing and storage. These courses focus on both theoretical and practical aspects of the profession.
Theoretical training provided within the programme also includes the fundamentals of human sciences, human behaviour, professional ethics and healthcare management, as well as an overview of the applicable legislation.
Thanks to the internships, students become independent users of tools and technologies in the fields of diagnostic imaging, nuclear medicine, radiotherapy and health physics.

Professional profile and employment opportunities

Graduates in Imaging and Radiation Techniques are qualified to work as radiology technicians, i.e. healthcare professionals with solid theoretical and practical knowledge regarding imaging and radiotherapy techniques, who are able to perform diagnostic, therapeutic and research procedures falling under the scope of diagnostic radiology, radiotherapy, nuclear medicine and health physics.
Upon prescription by a physician, radiology technicians perform all interventions that require the use of ionising radiation sources (both artificial and natural), thermal and ultrasound energy and nuclear magnetic resonance, as well as interventions for physical or dosimetric protection, independently or in collaboration with other health professionals. They also participate in the planning and organisation of work at their employing facility, in accordance with their role. Moreover, they plan and provide multi-purpose services within their competence, in direct collaboration with diagnostic radiology or nuclear medicine physicians, radiation therapy physicians and health physicists, according to diagnostic and therapeutic protocols previously defined by the person in charge of the facility. They are accountable for their actions, and in particular have a responsibility to check that any equipment entrusted to them is functioning properly, to solve minor malfunctions, and to implement quality assurance and control mechanisms in accordance with predefined indicators and standards. Lastly, they participate in the training of support staff, and contribute directly to continuing professional development and the advancement of research in their field. As part of the programme, the University ensures that graduates receive training in ionising radiation protection.
Graduates in Imaging and Radiotherapy Techniques can work for public and private healthcare facilities authorised in accordance with applicable laws and regulations, as employees or freelancers. Having adequate command of the English language, they can look for a job not only in Italy, but also in other European and non-European countries.
Typical employment settings for Bachelor's graduates in Imaging and Radiotherapy Techniques include:
- diagnostics imaging and radiotherapy departments in hospitals and other facilities within the Italian National Health Service, as well as in similar private facilities and research hospitals;
- manufacturers and sellers of diagnostic imaging and radiotherapy equipment;
- University and non-university research centres in biomedicine.

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: Biological Life Sciences and Pathology.
Timely notice of the various courses will be posted to: https://trm.cdl.unimi.it/it

Compulsory attendance

Attendance of all coursework is mandatory. Moreover, internship activities must be undertaken and completed within the designated year; students enrolled in subsequent years will not be permitted to register.

Degree programme final exams

Degrees in Imaging and Radiotherapy 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 in the submission and defence of a written thesis on a topic relating to practical-clinical work completed during the students for-credit pre-professional internship.
The final examination acts as a State Exam which serves to license students to practice the profession.

Campus

Educational activities for the Degree Programme in "Imaging and Radiotherapy Techniques" take place at the following locations:
- Polyclinic Location: Fondazione IRCCS Ca’ Granda Ospedale Maggiore Policlinico - Palazzina Valetudo (Via Pace 9) - Via F. Sforza, 35 - Milan - Academic Director Paola Bizzarri;
- IEO Location: University campus at Abbazia Mirasole – Strada Consortile del Mirasole 7, 20090 Opera (Milan) - Academic Director Andrea Vaccari;
- other private and public teaching hospitals and clinics.

The Departments and diagnostic facilities offering imaging, radiotherapy, and medical physics, at teaching hospitals within the national health system offer state-of-the-art scientific and therapeutic equipment, as well as access to leading professionals in the field of imaging and radiotherapy techniques. These facilities are likewise used for clinical training, professional internships, and activities relating to the final exam.

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**
Basis of patient care		5	(1) MED/45, (2) MED/17, (2) MED/42
Basis of Phisics and Mathematics		5	(3) FIS/07, (2) MAT/05
Computer Science Course		3	INF/01
Conventional radiology: Imaging and techniques		6	(2) MED/50, (2) FIS/07, (2) MED/36
English assessment B1 (2 ECTS)		2	ND
laboratory		1	ND
MORPHOLOGICAL AND FUNCTIONAL BASIS OF LIFE		6	(1) BIO/09, (1) BIO/17, (4) BIO/16
pathology and biological basis of life		6	(2) MED/03, (2) MED/04, (1) BIO/10, (1) BIO/13
Psychology, Professional Ethics and Deontology		5	(1) MED/50, (3) M-PSI/01, (1) MED/43
Radiobiology and Radioprotection		6	(2) MED/50, (1) FIS/07, (3) MED/36
Training (first year)		13	MED/50
	Total compulsory credits	58	
Elective courses			
2nd COURSE YEAR Core/compulsory courses/activities common			
Learning activity		**Ects**	**Sector**
Computed Tomography: Techniques		7	(1) MED/50, (1) ING-INF/07, (1) FIS/07, (4) MED/36
Contrast radiology: techniques		6	(1) MED/50, (1) MED/45, (2) BIO/14, (2) MED/36
laboratory		1	ND
Magnetic Resonance: Techniques		7	(1) MED/50, (1) ING-INF/07, (1) FIS/07, (4) MED/36
Neuroradiology and Interventional Radiology: Techniques		5	(2) MED/50, (1) MED/37, (1) MED/41, (1) MED/36
Other activities		1	ND
Radiological sciences applied to surgery		6	(1) MED/11, (1) MED/21, (1) MED/33, (1) MED/18, (2) MED/05
Training (second year)		25	MED/50
	Total compulsory credits	58	
Elective courses			

3rd COURSE YEAR Core/compulsory courses/activities common			
Learning activity		**Ects**	**Sector**
Health care systems organisation, professional values and responsibilities		5	(1) MED/50, (1) IUS/07, (1) SECS-P/10, (2) MED/42
laboratory		1	ND
Methods of experimental and technological research		5	(1) SECS-S/02, (2) ING-INF/05, (1) FIS/07, (1) MED/36
Nuclear Medicine		8	(2) MED/50, (1) ING-INF/07, (1) FIS/07, (3) MED/36, (1) BIO/12
Other activities		2	ND
Radiotherapy		8	(2) MED/50, (1) ING-INF/07, (1) FIS/07, (4) MED/36
Training (third year)		22	MED/50
	Total compulsory credits	51	
Elective courses			
End of course requirements			
Final examination		7	NA
	Total compulsory credits	7	