UNIVERSITA' DEGLI STUDI DI MILANO
PROGRAMME DESCRIPTION - ACADEMIC YEAR 2025/26
BACHELOR
Neurophysiopathology 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:	D76

PERSONS/ROLES

Head of Interdepartmental Study Programme

Prof.ssa Paola Canevini

Tutors - Faculty

Per l'orientamento:
prof. Alberto Priori
prof.ssa Maria Paola Canevini
dott. Tommaso Bocci

Per stage e tirocini:
dott. Massimo Garegnani

Per la mobilità internazionale:
dott. Massimo Garegnani

Degree Course website

https://neurofisiopatologia.cdl.unimi.it/it

Academic Office for the Degree Programme

Email: mgaregnani@dongnocchi.it

CHARACTERISTICS OF DEGREE PROGRAMME

General and specific learning objectives

The Bachelor's degree programme in Neurophysiopathology Techniques (degree class L/SNT3) Health professions for technical assistance) has a three-year duration.
The programme, which is worth 180 university credits (CFU/ECTS), is designed to produce graduates who are able to perform the whole range of neurophysiological tests used in diagnostics and research (electroencephalography, multi-modal evoked potentials, polygraphy, electromyography, electroneurography, doppler sonography).
Graduates are expected to have a good knowledge base encompassing the morphology of the central and peripheral nervous system, and the physiological mechanisms that regulate their functions. They should also have systematic knowledge of a wide range of conditions, from the most common diseases of the central and peripheral nervous system to muscular system diseases and child neuropsychiatric disorders.
The study plan includes both theoretical and practical classes, as well as internships. As a matter of fact, practical classes and internships play a particularly important role in the training of students. Internships are coordinated by top professors in the field, and student interns are supervised by professional tutors for the duration of their placement.

In compliance with EU standards, Bachelor's graduates in Neurophysiopathology Techniques are required to:
- be familiar with the principles of bioethics, deontology and legal medicine, as applicable to their profession;
- have an adequate theoretical grounding in the basic sciences, with a view to their future application on the job;
- be able to oversee all operations regarding the collection and optimisation of various diagnostic methods (also by using ICT tools) and to draft technical reports on these procedures, upon request;

- be able to take ownership of their own professional development;
- be able to avail themselves of support staff, if necessary, and to contribute to their training;
- demonstrate teaching skills in terms of tutoring students in clinical practice;
- have an understanding of the fundamental biological organisation of organisms;
- understand the underlying mechanisms of how genetic information is passed on and expressed;
- know the fundamentals of chemistry, to the extent necessary to understand the structure of living things and organic compounds of biochemical and pharmacological interest;
- have a good grasp of the theoretical and methodological basics of physics and statistics, to the extent necessary to identify, understand and interpret biomedical phenomena;
- understand the structural organisation of the human body, including its most significant anatomical features and clinical aspects (from a macroscopic and microscopic perspective), as well as the mechanisms governing embryonic development and organ differentiation;
- know the molecular and biochemical mechanisms underpinning life processes and their metabolic correlates;
- understand the mechanisms governing the generation of bioelectrical signals in the central and peripheral nervous system (electroencephalography and multi-modal evoked potentials for the former, peripheral nerves, neuromuscular junctions and striated muscles for the latter), and be able to quantitatively measure these signals;
- have developed systematic knowledge of a wide range of conditions, from the most common diseases of the central and peripheral nervous system to muscular system diseases and child neuropsychiatric disorders;
- be able to apply the most suitable methods to record bioelectrical phenomena, by intervening directly on the patient and handling the necessary equipment, in accordance with a work plan designed in close collaboration with a specialist physician (whether for instrumental diagnostics or for neurophysiological research purposes);
- be able to perform specific diagnostic tests (basic electroencephalography and EEG activation techniques; video-electroencephalography; surface electromyography, including participation in invasive electromyography procedures; somatosensory, auditory and visual evoked potentials; sleep polygraphy and polygraphy applied to the autonomic nervous system; participation in ultrasonography, extracranial and intracranial doppler ultrasound);
- master basic and specialised recording techniques applicable to acute patients, patients in the ICU and patients undergoing surgical procedures;
- have knowledge of the different classes of drugs, toxicants and substances of abuse, their main mechanisms of action, therapeutic uses, side effects and toxicity;
- have knowledge of the rules on radiation protection laid down by EU directives;
- have knowledge of the core laws and regulations on the organisation of health services;
- have knowledge of the rules of professional conduct and liability, as well as a critical understanding of the ethical principles underpinning the range of choices available to professionals;
- be able to use instrumental methods to determine electrical activity in the brain for clinical and/or legal purposes;
- be knowledgeable about prevention measures to enhance safety in the workplace (both for patients and health workers);
- have computer literacy skills enabling them to manage and use service information systems and self-learning resources;
- be proficient in a language of the European Union other than Italian, in order to be able to update their professional knowledge by reading international articles and papers.

Professional profile and employment opportunities

A neurophysiopathology technician is a healthcare professional who performs medically-prescribed neurological and neurosurgical diagnostic tests (electroencephalography, electroneuromyography, polygraphy, evoked potentials, ultrasound), in order to diagnose nervous system disorders.

Neurophysiopathology technicians:

a. apply the most suitable methods to record bioelectrical phenomena, by intervening directly on the patient and handling the necessary equipment, in accordance with a work plan designed in close collaboration with a specialist physician (whether for instrumental diagnostics or for neurophysiological research purposes);

b. oversee all operations regarding the collection and optimisation of various diagnostic methods, and draft technical reports on these procedures, upon request;

c. are directly responsible for the implementation and outcome of the chosen diagnostic method;

d. use instrumental/diagnostic methods to determine electrical activity in the brain for clinical and/or legal purposes;

e. prepare equipment for use and check its proper functioning.

Bachelor's graduates in Neurophysiopathology Techniques can work:

- for hospitals and teaching clinics, in neurophysiology and neuropathology units where their profile is in demand;
- in private multi-purpose health centres;
- for commercial manufacturers of neurophysiology diagnostic equipment, with job functions related to equipment installation, testing and monitoring.

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: Pre-clinical disciplines.
Timely notice of the various courses will be posted to: https://neurofisiopatologia.cdl.unimi.it/it

Compulsory attendance

Attendance of all coursework, and internship hours (which must be completed during the designated year), is mandatory.

Degree programme final exams

Degrees in Neurophysiopathology 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.

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**
Applied Physics to Biology And Medicine, Mathematical Analysis And Radiation Protection		5	(3) FIS/07, (1) MAT/05, (1) MED/36
English assessment B1 (2 ECTS)		2	ND
Information Processing		9	(1) SECS-S/02, (1) MED/01, (1) ING-INF/07, (3) ING-INF/05, (3) INF/01
Internship (First Year)		20	MED/50
Morphological Disciplines		6	(1) BIO/17, (5) BIO/16
Neurological Sciences 1		5	(2) MED/50, (2) MED/48, (1) MED/26
Pre-Clinical Disciplines		9	(1) MED/03, (2) BIO/10, (4) BIO/09, (2) BIO/14
Seminars (First Year)		2	ND
Teaching-Psycho Sciences And Health Management		4	(1) M-PSI/01, (1) IUS/07, (1) SPS/07, (1) SECS-P/10
	Total compulsory credits	62	
Elective courses			
2nd COURSE YEAR Core/compulsory courses/activities common			
Learning activity		**Ects**	**Sector**
Clinical Sciences		6	(1) MED/38, (1) MED/31, (2) MED/33, (1) MED/16, (1) MED/08
Internship (Second Year)		20	MED/50
Neurological Sciences 2		28	(12) MED/50, (1) MED/27, (10) MED/48, (5) MED/26
Seminars (Second Year)		2	ND
	Total compulsory credits	56	
Elective courses			
3rd COURSE YEAR Core/compulsory courses/activities common			
Learning activity		**Ects**	**Sector**
Health Care And Preventive Disciplines		5	(3) MED/48, (1) MED/43, (1) MED/42
Internship (Third Year)		20	MED/50
Neurological Sciences 3		19	(7) MED/50, (1) MED/39, (7) MED/26, (1) MED/34, (1) MED/25, (1) MED/37, (1) MED/41
Professional Workshops		3	ND
Seminars (Third Year)		2	ND
	Total compulsory credits	49	
Elective courses			
End of course requirements			
Final Test		7	NA
	Total compulsory credits	7	