UNIVERSITA' DEGLI STUDI DI MILANO
PROGRAMME DESCRIPTION - ACADEMIC YEAR 2022/23
BACHELOR
Biomedical Laboratory Techniques (Classe L/SNT3)
Enrolled 2017/18 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:	D74

PERSONS/ROLES

Head of Interdepartmental Study Programme

Prof.ssa Lorenza Tacchini

Tutors - Faculty

Per l'orientamento:
Prof.ssa Lorenza Tacchini
Prof.ssa Cristina Battaglia
Prof.ssa Elena Donetti
Prof.ssa Cristina Gervasini
Prof. Luca Massaccesi
Prof.ssa Elena Pariani
Prof.ssa Stefania Recalcati
Prof.ssa Francesca Sisto

Per la mobilità internazionale e l'Erasmus:
Prof.ssa Stefania Recalcati

Per stage e tirocini:
Dott.ssa Angela Boria

Per tesi di laurea:
Prof.ssa Lorenza Tacchini

Per riconoscimento crediti:
Prof.ssa Lorenza Tacchini

Degree Course website

https://tlb.cdl.unimi.it/it

Admissions and enrolment:

https://www.unimi.it/it/studiare/frequentare-un-corso-di-laurea/iscriversi/iscriversi-una-prima-laurea

CHARACTERISTICS OF DEGREE PROGRAMME

General and specific learning objectives

In terms of the educational goals specific to this degree programme, and the professional baseline provided to programme graduates to continue their studies within the same discipline as their first degree or in other faculties or programmes within the University, the degree programme in Biomedical Laboratory Techniques has the following educational goals:
-possess an integrated body of theoretical knowledge in the field of laboratory sciences and techniques allowing students to analyse, assess, interpret, apply, and judiciously plan biomedical and bio-technological laboratory activities in terms of biochemical, microbiological / virological, pharmacological, toxicological, immunological, pathological, haematological, cytological, and histopathological analysis. They do so as independent professionals, but also in collaboration with other

personnel holding a degree in laboratory science, and assigned various operating responsibilities;
-have theoretical knowledge of radiation-protection protocols and related regulations;
-possess an integrated body of practical knowledge in the field of laboratory sciences and techniques such that they might bear the responsibility, within the scope of their own research and training, of conducting biomedical and bio-technological laboratory activities in terms of biochemical, microbiological / virological, pharmacological, toxicological, immunological, pathological, haematological, cytological, and histopathological analysis;
-possess a practical understanding of the application and monitoring of radiation-protection measures;
-have the requisite professional method so that services can be provided independently and safely, either alone or in collaboration with other personnel in complementary positions;
-be able to carry out, with all professional care and training, work protocols as set by one's executive supervisors;
-ensure that one's services match all indicators and standards established by the director in the clinic or hospital where one is working;
-be able to propose work-planning and -organisation criteria within the hospital or clinic in which one works;
-be able to control and check proper functioning of all devices used, handling routine maintenance on the same, and independently troubleshooting any minor issues;
-be able to read, interpret, and understand instructions and illustrative symbols in instruction and operating manuals, including in technical English;
-have a basic proficiency in the English language allowing them to work in their professional field both in Italy and in Europe (or beyond);
-acquire a liberal enough education to enter into a variety of two-year degree programmes after graduation.

Professional profile and employment opportunities

The Biomedical Laboratory Technician is a healthcare worker with a solid basis of practical knowledge in the field of laboratory sciences and techniques such that they might bear the responsibility, within the scope of their own research and training, of conducting biomedical and bio-technological laboratory activities in terms of biochemical, microbiological / virological, pharmacological, toxicological, immunological, pathological, haematological, cytological, and histopathological analysis;

Those earning a degree in Biomedical Laboratories provide their professional services on the job in an independent technical-professional manner in direct collaboration with other persons with a degree in laboratory sciences tasked with various operational responsibilities falling within their professional aegis. They are responsible, within their laboratory facilities, of the proper discharge of all analytical procedures, and the workplace protocols defined by supervisory executives; ensuring that their own professional services align with the indicators and standards established by the facility director; controlling and verifying proper equipment function, carrying out routine maintenance and basic troubleshooting; taking part in work planning and organisation within their own clinic.

Graduates of the Biomedical Laboratory Techniques programme may work for laboratory facilities in the public or private sector, as authorised under applicable law, as either an employee or independent professional. A basic proficiency in the English language allowing them to work both in Italy and Europe (or beyond) is important.

Professional opportunities for graduates of the Biomedical Laboratory Techniques programme may be found in:

_ laboratories engaged in clinical-biochemical, microbiological / virological analysis, pathological, haematological and immune-haematological, immunological, genetic-molecular, toxicopharmacological, cytohistoanatomopathological practice, working in a hospital or non-hospital setting within the National Healthcare System and in similar private facilities, and residential-care facilities with a scientific focus;

_ quality-control laboratories in the biomedical field for pharmaceutical industries;

_ manufacturing industries and commercial outfits operating in the field of laboratory diagnosis;

_ university and non-university research laboratories in the biomedical field.

Initial knowledge required

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 is given in accordance with directives and timetables established from year to year by the MUR.

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 exams in: Medical chemistry - Foundations of biomedical sciences.

Timely notice of the various courses will be posted to: https://tlb.cdl.unimi.it/it

Compulsory attendance

Attendance of all coursework is mandatory. Moreover, Laboratory courses 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 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 Biomedical Laboratory Techniques are offered through the teaching facilities located in the Città Studi area, as well as other facilities coordinated by the Faculty of Medicine and Surgery, including a number of teaching hospitals, both public and private, within the national health service, and holding academic accreditation. The Departments within the Faculty of Medicine and Surgery, as well as the teaching hospitals and laboratories within the national health system offer state-of-the-art scientific and therapeutic equipment, as well as access to professional expertise in the laboratory medicine and 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 organizations.

Similar international mobility opportunities are provided outside Europe, through agreements with a number of prestigious institutions.

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 organizes 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.

Learn more at https://www.unimi.it/en/international/study-abroad/studying-abroad-erasmus

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

1st COURSE YEAR Core/compulsory courses/activities common

Learning activity		Ects	Sector
Basic analytical chemistry		1	ND
Biochemistry and Molecular Biology		6	(1) BIO/11, (5) BIO/10
Computer Science Course		3	INF/01
English assessment B1 (2 ECTS)		2	ND
General Pathology, Immunology and Hystory of Medicine		6	(4) MED/04, (2) MED/02
Human Anatomy		4	BIO/16
Human Physiology		4	BIO/09
Life Sciences		5	(1) MED/03, (2) BIO/17, (2) BIO/13
Medical Chemistry		4	BIO/10
Microbiology		5	(2) MED/46, (3) MED/07
Occupational health and safety		1	ND
Physics, Statistics and Radioprotection		9	(4) MED/01, (4) FIS/07, (1) MED/36
Traineeship (first year)		8	MED/46
	Total compulsory credits	58	

Elective courses

2nd COURSE YEAR Core/compulsory courses/activities common

Learning activity		Ects	Sector
Clinical Biochemistry and related diagnostic techniques		7	(3) MED/46, (4) BIO/12
Clinical Microbiology and related diagnostic techniques		5	(2) MED/46, (3) MED/07
Histological and Cytological Tecniques		5	MED/08
Medical Pathophysiology		6	(1) MED/13, (1) MED/14, (1) MED/15, (2) MED/09, (1) MED/06
Public health and laboratory organization		6	(2) ING-INF/05, (2) SECS-P/06, (2) MED/42
Technical science of biomedical laboratory		4	MED/46
Traineeship (second year)		23	MED/46
	Total compulsory credits	56	

Elective courses

3rd COURSE YEAR Core/compulsory courses/activities common

Learning activity		Ects	Sector
Diagnostic Techniques in Clinical Biochemistry, Molecular Biology and Clinical Pathology		7	(3) MED/05, (4) BIO/12
Diagnostic Techniques in Cytopathology and Histopathology		4	(2) MED/46, (2) MED/08
Diagnostic Techniques in Microbiology, Virology, Micology and Parasitology		4	(2) MED/46, (2) MED/07
Medical genetics pathologies		1	ND
Pharmacology/Toxycology and Legal Medicine		5	(2) MED/43, (3) BIO/14
Technical science of biomedical laboratory		3	MED/46
Traineeship (third year)		29	MED/46
	Total compulsory credits	53	

Elective courses

End of course requirements

Final examination		7	NA
	Total compulsory credits	7	

COURSE PROGRESSION REQUIREMENTS

The course contains the following obligatory or advised prerequisites

Learning activity	Prescribed foundation courses	O/S
Diagnostic Techniques in Cytopathology and Histopathology	Histological and Cytological Tecniques	Core/compulsory
Pharmacology/Toxycology and Legal Medicine	Medical Pathophysiology	Core/compulsory
Medical Pathophysiology	Human Physiology	Core/compulsory
	Human Anatomy	Core/compulsory
	Life Sciences	Core/compulsory
	General Pathology, Immunology and Hystory of Medicine	Core/compulsory
Histological and Cytological Tecniques	Human Physiology	Core/compulsory

	Human Anatomy	Core/compulsory
Diagnostic Techniques in Clinical Biochemistry, Molecular Biology and Clinical Pathology	General Pathology, Immunology and Hystory of Medicine	Core/compulsory
	Clinical Biochemistry and related diagnostic techniques	Core/compulsory
Clinical Biochemistry and related diagnostic techniques	Biochemistry and Molecular Biology	Core/compulsory
Clinical Microbiology and related diagnostic techniques	Microbiology	Core/compulsory
Diagnostic Techniques in Microbiology, Virology, Micology and Parasitology	Clinical Microbiology and related diagnostic techniques	Core/compulsory