



UNICAMILLUS

DIDACTIC REGULATION OF THE BACHELOR'S DEGREE IN BIOMEDICAL LABORATORY TECHNIQUES

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Attached: Study Plan

Article 1 Introduction

It is established by the Saint Camillus International University of Health and Medical Sciences, in this document referred to as UniCamillus, the Bachelor's Degree Course in "Biomedical Laboratory Techniques" (qualifying for medical practice as Health Technician of Biomedical Laboratory), class L/STN3. The Course has a normal duration of 3 years and is completed with a final exam which allows to practice and the achievement of the academic title of "Degree in Biomedical Laboratory Techniques".

The regulation disciplines the structure of contents, the organization and the functioning of the Degree Course in Biomedical Laboratory Techniques, class L/SNT3, in accordance with D.M. 22 October 2004, n. 270.

The Degree Course (DC) has the objective of providing students with knowledge and skills necessary for the professional practice as Health Technician of Biomedical Laboratory as regulated by the profile of M.D. 745 of September 26th 1994.

The didactic structure pertaining the Degree Course is the Departmental Faculty of Medicine and Surgery.

Article 2 Learning Objectives Specific to the Course

The Course belongs to the class of Degrees in "Technical Health Professions" (class L/STN/3) and, based on the decree of March 13th 2018 which establishes the register of the technical health professions, requires the registration of graduates who will practice, after the achievement of the specific academic title. The undergraduate degree Course in Biomedical Laboratory Techniques is intended to train professionals endowed with knowledge and competences necessary to carry out their own laboratory activities of analysis and research, related to biomedical and biotechnological analysis, and in particular biochemical, microbiological and virological, pharmaco-toxicological, immunological, clinical-pathological, hematological, cytological and histopathological ones, according to the M.D. 745 of September 26th 1994. The clinical practice is carried out also in the highly specialized areas of Medical Genetics, Oncohematology, Molecular Biology, Molecular Virology, Molecular Bacteriology, Molecular and Proteomic Parasitology, with knowledge of the following main methodologies: human genome sequencing, virological and bacteriological sequencing, cytofluorometry, cryopreservation and cellular banks, molecular cloning techniques, building of genomic libraries, molecular cloning with phage and cosmid vectors, use of recombinant DNA in the clinical methodology, next-generation sequencing, liquid-solid or absorption chromatography techniques, ion-exchange chromatography, chromatography by exclusion, chromatography by affinity, high performance liquid chromatography (HPLC), MALDI TOFF mass spectrometry, karyotype and FISH analysis, analysis by Microarray techniques, single nucleotide polymorphism analysis (SNP).

The objective is to train graduates up to high levels of theoretical and practical knowledge of innovative methodologies, such as to make them more attractive in specific working fields.

The degree course curriculum includes training activities aimed at the acquisition of specific knowledge and competences, related to the tasks of the professional profile of Biomedical Laboratory Technician. Graduates in Biomedical Laboratory Techniques are the health professional in laboratory facilities who are responsible for the correct implementation of analysis procedures and their performance, work with technical and professional autonomy in close collaboration with graduates who are part of the staff in the laboratory and are accountable for various operational areas.

Competences:

- 1) They are responsible, in laboratory facilities, for the correct implementation of analytical procedures and their actions in accordance with their function and under work protocols pre-arranged by the facility manager;
- 2) They verify the matching between the services provided and the indicators and standards set by the manager of the organization;
- 3) They check and verify the correct functioning of used instruments, they are responsible for the daily maintenance and eventually remove small incongruities;
- 4) Participate in the planning and organization of work in the facility where they work;



- 5) The Biomedical Laboratory Technician contributes to the training of the support personnel and directly contributes to the update relating to his own professional profile and to research.

They must also be able to speak at least one European language, in addition to Italian, in the specific field of competence and for the exchange of general information, as provided for in the study plan. The acquisition of professional competences is achieved by a theoretical and practical training (clinical practice and laboratory) which includes the acquisition of behavioral skills and which must be achieved in the specific work field, such as to guarantee, by the end of the educational path, full command of all necessary competences and their immediate use in a working environment. Particular importance, being an integral and qualifying part of the professional training, is held by the clinical practice, conducted under the guidance and supervision of specifically-assigned professional tutors experts in the technical field, coordinated by a professor belonging to the maximum educational level envisaged for the professional profile of physiotherapist, in accordance with the rules set the European level.

Article 3 Professional Opportunities and Access to Post-graduate Studies

Graduates in Biomedical Laboratory Techniques can work in public healthcare facilities (Hospitals, University Polyclinics, Research Institutes and so on) or in private facilities (Analysis Laboratories and so on) as both an employee or a freelancer.

Graduates are eligible to apply for postgraduate courses:

Classification of postgraduate courses	ECTS	Duration (years)
• Master's Degree Course in Sciences of Technical and Diagnostic Healthcare Professions	120	2
• Master's Degree in Medical Biotechnology	120	2
• 1st level Master	60	1 or 2

After the completion of the Master's Degree in Sciences of Technical and Diagnostic Healthcare Professions, the graduate will be eligible for:

Classification of post-master education	ECTS	Duration (years)
• Specialization Schools. Technical Field.		4 or 5
• PhDs	180	3
• 2nd level Master	60	1 or 2

Article 4 Admission Requirements

The Degree Course has a limited number of places available, planned at national level (ex art. 1, comma 1, letter a) Law n. 264/1999) and the maximum number of those who can enrol in the first year of the course is defined annually by a specific Ministerial Decree.

In order to enrol, candidates must sit for an admission test, which consists in multiple-choice questions about general knowledge, logical reasoning, chemistry, physics, mathematics and biology, according to the ministerial didactic program of the secondary high school. The test is set annually by the Athenaeum according to the methods and timing determined by the competent bodies in compliance with the current legislation.

Only the candidates in possession of a secondary High School Diploma or of another academic title obtained outside of Italy and recognized as equivalent in accordance with the current legislation may be admitted to the Degree Course.

Candidates who rank successfully in the list of admitted students but do not demonstrate sufficient knowledge in chemistry, biology and physics, will be given additional educational duties (Obblighi Formativi Aggiuntivi, OFA) to be solved via make-up courses organized by the University. Students, therefore, are admitted with an additional educational duty only with respect to the subject/s in which they have a knowledge deficit and the



solvency of the OFA will be certified by the Professor holding the course through a written or oral test issuing a specific qualifying evaluation, to be obtained before the first exam of the I year of the course.

The admission to the Degree Course requires also medical examinations, in accordance with the procedures stated by the current legislation, regarding the suitability for the specific professional profile.

Article 5 Didactic System

The departmental Faculty of Medicine and Surgery defines the Didactic Organization, in compliance with the current legislation and sets for each Degree Course the classification of learning activities in basic, qualifying, similar and elective, aimed at the final exam. Each educational activity is relevant to different didactic fields; they include courses to which the Scientific Disciplinary Sectors pertain.

All the didactic programmes, as well as the lessons' schedule, are available online on the UniCamillus website, www.unicamillus.org, in the DCs' dedicated page.

Article 6 Typology of Educational Activities

The Degree Course in Biomedical Laboratory Techniques can have the following types of didactic activities:

- Frontal lessons: discussion of a specific topic identified by a title, conducted by one or more professor in class and addressed to all students;
- Seminars: presentation in class of clinical cases/case reports carried out by the students thanks to their professors' tutoring;
- Practical training: practical laboratories to develop technical skills, even advanced, through simulations on dummies or directly on students;
- Professionalizing clinical practice: direct assistance to patients in an highly complex and multidisciplinary clinical care entity with direct supervision of tutors.

Article 7 ECTS

The unit of measurement for the work performed by the student to accomplish every learning activity as referred to in the Didactic Regulation and to obtain the qualification is the academic credit called "Credito Formativo Universitario (CFU/ECTS)".

The Degree Course in Biomedical Laboratory Techniques requires 180 ECTS in total, during the 3 years of the course, including those gained in educational activities aimed at the development of specific professional skills (Clinical Practice - 60 ECTS).

Each ECTS, equal to 25 hours of learning for the student, includes hours of frontal lessons, practice, laboratory, seminary and other learning activities as requested by the Didactic Organization, alongside with hours of individual study and personal commitment required to complete the learning process in order to pass the exam, or to implement educational activities not directly subject to the academic didactics (dissertation, projects, clinical practice, linguistic and IT competences, ecc.). ECTS corresponding to each learning activity are acquired by the student at the passing of the exam or of any other form of examination. Grades are expressed on a scale of 30 and the final exam on a scale of 110, possibly with a honor.

Professionalizing educational activities include participation to clinical practice, laboratory and practical activities carried out in facilities appropriate for dimensions and technical features, in relation to the scheduled activity and to the number of students.

Article 8 Clinical Practice

The structure and organization of professionalizing activities are administered by the Didactic Director who arranges a detailed plan for their implementation.

Clinical practice activities are held under the direction and responsibility of Tutors.

Clinical practice is the irreplaceable learning mode for professional skills, through practical experimentation and integration of theoretical-scientific knowledge with professional and organizational operational practice.

Clinical practice performance - mandatory and non-replaceable - is certified by the Tutor, who assesses and



documents in the dedicated evaluation form the levels of skills gradually achieved by the student.

For each student, the Didactic Director monitors the performing of the total number of hours of programmed clinical practice. At the end of each year of the degree course, the student must take the annual clinical practice exam. Such exam is evaluated on a scale of 30.

The activities that the student performs during the clinical practice must not and cannot be considered as a replacement of staff's working hours.

Article 9 Academic Calendar and Compulsory Attendance

The student must attend the didactic activities scheduled in the study plan. The calendar is planned in response to the organizational needs of the University which evaluates its overall requirements. The schedule cannot be modified upon request of a single student, for any reason (health, religion, other).

In order to be admitted to sit for the exams, the student must have attended at least the 75% of the hours of the didactic activities planned for every integrated course. The student who does not reach the 75% threshold of attendance is not admitted to the exam. The margin of tolerance of 25% is aimed at covering, in addition to absences due to force majeure or to any other cause, all the individual needs of the students, included the religious festivities that might occur within the lessons' calendar, provided that the University is open to young people of any faith and believes that they must have the opportunity to freely profess it, obviously having regard to the limits of compatibility with the unavoidable requirement of attending at least $\frac{3}{4}$ of the scheduled classes. Attendance is verified by professors thanks to the checking methods established by the Athenaeum.

Professors, at the end of each didactic term, shall communicate, even in an electronic format, to the competent offices of the Secretariat, the names of the students whose attendance is missing. Should this communication not be submitted, the student will be considered to have fulfilled the mandatory attendance.

Article 10 Elective Courses

The Teaching Body sets the offer of elective courses, doable as frontal lessons, seminars, interactive courses in small groups, until the achievement of a total number of 6 ECTS.

The calendar of activities is published before the beginning of each academic year, or, in any case, before each didactic term, along with the calendar of mandatory didactic activities.

Elective didactics are considered as Professors' official teaching and thus are recorded in the lectures' register. The grade obtained in these classes is taken into account for the attribution of the grade in the final exam.

Article 11 Director of the Didactic Activities

The 3-year appointment is attributable exclusively to employees with a professional profile suitable for the Degree Course. The Director of Didactic Activities is selected among the professors holding a Master's Degree in Sciences of Technical and Diagnostic Health Professions who have no less than 5 years of experience in the education field in their Curriculum.

The Director of Didactic Activities has the responsibility to:

- plan and organize the clinical practice for the students, and ensure the adequacy of the facilities assigned for the theoretical and practical training;
- ensure the correct implementation of the educational offer;
- coordinate educational activities among professors of both theoretical and clinical disciplines;
- manage the inclusion and the educational development of tutors of the Degree Course;
- coordinate the tutoring activities.

Article 12 Exams

The total number of exams cannot exceed the number of the official courses established by the Regulation and anyway cannot be more than 20 during the 3 years of the course. The DC is divided into two semesters. Usually there are:

- 2 ordinary exam sessions (winter and summer session);
- 2 recovery exam sessions (extraordinary September session and extraordinary January session).



In order to take the exams and other tests which demonstrate the learning results, the student must be up to date with the payment of taxes and contributions, must have passed possible preparatory exams and must be in possession of all the certificates of attendance.

Exams are set by the professors before the beginning of the Course and the related methods are communicated to the students.

The student who fails an exam can sit for it at the next date, even in the same session, provided that at least two weeks have passed since the failed exam.

In order to pass the exam, the student must reach at minimum 18/30.

Article 13 Autonomous Learning

The Teaching Body allows students to devote themselves to autonomous study, completely free from didactic activities and heading to:

- the use, individually or in small groups, autonomously or upon recommendation of Professors, of teaching support material made available by the Degree Course in order to promote self-learning and self-assessment, in order to achieve the set learning objectives. The teaching support materials (textbooks, simulators, dummies, audiovisual, computer programmes, ecc) will be placed, within reason, in areas managed by the Athenaeum's staff.

- personal study, for exam preparation.

Article 14 Final Exam and Achievement of the Academic Degree

In order to be eligible for the final exam, the student must have acquired all the ECTS in the educational activities as in the study plan, including those relative to the clinical practice and to seminar activities.

The Final Graduation Exam constitutes a State Exam qualifying for the professional license and is composed by:

- a practical test during which the student must prove to have acquired the knowledge and the theoretical-practical and technical-operational skills typical of the professional profile;
- draft and discussion of a thesis.

6 ECTS are acquirable by passing the final exam.

For the determination of the Graduation grade, expressed on a scale of 110, the following parameters contribute:

- 1) arithmetical average of the marks obtained in the exams scheduled in the study plan, expressed on a scale of 110,
- 2) points given by the Graduation Commission during the dissertation,
- 3) points obtained in the practical test.

Article 15 Loss of the Student Status

The enrolment as out-of-course for more than 4 academic years is not possible; after such period the enrolled student will be disqualified. Consequently, the student cannot exceed 7 academic years for the achievement of the graduation title. Disqualification does not affect students who have passed all exams and must pass only the final exam for the graduation.

The disqualified student can enrol again in the Bachelor's Degree Course after having passed again the admission test.

For this purpose the Teaching Body can, upon request of the concerned student, validate the credits acquired during the previous academic career, after checking their non-obsolescence.

Article 16 Incoming Transfers from Other Universities

Incoming transfer applications from Biomedical Laboratory Techniques degree courses of other universities must be complete of all the necessary documentation for the assessment of the student's academic credits.



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Such requests will be evaluated by an appointed Commission for transfers and previous qualifications, depending on available places.

UniCamillus may independently request confirmation from the University of origin about the presented certifications or the declarations implemented by the student in order to recognize the exams.

Article 17 ECTS Validation from Other Degree Courses

Validation of ECTS acquired by the student, with relative grading, from other Degree Courses is examined from a designated Didactic Commission of professors entrusted by the Rector. ECTS can be transferred according to a judgement of congruity with the learning objectives of one or more courses of the Degree Course Didactic Organization, in accordance with the current legislation and the University Didactic Regulation.

UniCamillus may independently request confirmation from the University of origin about the presented certifications or the declarations implemented by the student in order to recognize of ECTS.

Article 18 Final Provisions

For juridical and interpretative purposes, the Document filed and available at the Secretariat, drafted in Italian, is authentic. As for anything non covered by this Regulation, please refer to the Statute, the Didactic Regulation and the other provisions that govern the University activities.

STUDY PLAN OF THE BACHELOR'S DEGREE COURSE IN BIOMEDICAL LABORATORY TECHNIQUES

FIRST YEAR - TOTAL ECTS 60

I SEMESTER		
SSD	Integrated Courses	ECTS
	MATHEMATICS, PHYSICS AND INFORMATION TECHNOLOGY	8
FIS/07	Medical Physics	3
MED/01	Medical Statistics	3
INF/01	Information Technology	2
	HISTOLOGY, BIOLOGY, ANATOMY AND GENETICS	8
BIO/17	Histology	2
BIO/16	Human Anatomy	2
BIO/13	Cellular and General Biology	2
MED/03	Medical Genetics	2
	BIOCHEMISTRY, PHYSIOLOGY AND MICROBIOLOGY	10
BIO/09	Physiology	2
BIO/10	Biochemistry	4
BIO/12	Applied Biochemistry	1
MED/07	Microbiology	2
MED/46	Technical Sciences of Laboratory Techniques	1
II SEMESTER		
SSD	Integrated Courses	ECTS
	MICROBIOLOGY AND CLINICAL MICROBIOLOGY	8
MED/07	Microbiology, Bacteriology, Virology	4
MED/42	Hygiene and Environmental Prevention	1
VET/06	General Parasitology	1
MED/46	Technical Sciences of Laboratory Medicine	2
L-LIN/12	SCIENTIFIC ENGLISH	3
MED/46	Clinical Practice	20
	IT / Seminar Activities	2
	Professional Laboratories	1

SECOND YEAR - TOTAL ECTS 60

I SEMESTER		
SSD	Integrated Courses	ECTS
	CLINICAL BIOCHEMISTRY, CLINICAL MOLECULAR BIOLOGY AND APPLIED STATISTICS	6
BIO/12	Clinical Biochemistry and Clinical Molecular Biology	2
ING-INF/05	Data Processing Systems	1
SECS-S/02	Statistics for Experimental Research	1
MED/46	Technical Sciences of Laboratory Medicine	2
	GENERAL AND CLINICAL PATHOLOGY	7
MED/04	General and Cellular Pathology	2
MED/05	Clinical Pathology and Immunohematology	3
MED/46	Technical Sciences of Laboratory Medicine	2
	CLINICAL BIOCHEMISTRY AND IMMUNOLOGY	6
BIO/12	Laboratory Biochemistry	2
MED/04	General Pathology (immunology, Physiopathology)	3
MED/46	Technical Sciences of Laboratory Medicine	1
II SEMESTER		
SSD	Integrated Courses	ECTS
	PATHOLOGICAL ANATOMY	5
MED/08	Basics of histopathology and special Histopathology	4
MED/46	Technical Sciences of Medical Laboratory, Histo-Cystopathology	1
	CLINICAL BIOCHEMISTRY AND PHARMACEUTICAL TOXICOLOGY	5
BIO/12	Special Clinical Biochemistry	2
BIO/14	Pharmaceutical Toxicology and galenic Pharmacology	3
MED/46	Clinical Practice	25
	Elective Courses	3
	IT / Seminar Activities	2
	Professional Laboratories	1

THIRD YEAR - TOTAL ECTS 60

I SEMESTER		
SSD	Integrated Courses	ECTS
	MICROBIOLOGICAL DIAGNOSTICS	6
MED/07	Bacteriological, Virological, Mycological Diagnostics	3
VET/06	Parasitological Diagnostics	1
MED/46	Diagnostic Laboratory Techniques	2
	PATHOLOGICAL ANATOMY 2	5
MED/08	Elements of Autopsy, Cytopathology, Histology, Autopsy Techniques	4
MED/46	Techniques of Molecular Pathology	1
	SOCIAL AND INTERNATIONAL ECONOMICS AND POLITICS	11
SECS-P/07	Business Administration	2
SECS-P/02	Economical Politics	4
MED/42	Hygiene and environmental prevention	1
MED/44	Occupational Medicine	1
MED/43	Forensic Medicine	1
MED/02	History of Medicine	2
II SEMESTER		
SSD	Integrated Courses	ECTS
	MEDICAL ONCOLOGY AND BLOOD DISEASES	11
MED/15	Blood Diseases, onco-hematology	5
MED/06	Medical Oncology	5
MED/36	Diagnostic imaging	1
MED/46	Clinical Practice	15
	Elective Courses	3
	IT / Seminar Activities	2
	Professional Laboratories	1
	FINAL EXAM	6