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ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA



School of Medicine

LAUREA (FIRST CYCLE DEGREE/  
BACHELOR - 180 ECTS) IN  
BIOMEDICAL LABORATORY  
TECHNIQUES A.Y. 2013/2014  
Programme Director Prof. Massimo Derenzini

REPORT

Study Programme Report  
Biomedical Laboratory techniques  
Programme ex D.M. 270/04 - Code 8484 - Class L/SNT3  
School of Medicine  
Programme Director Prof. Massimo Derenzini

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# WHAT IS THE STUDY PROGRAMME REPORT?

## What is the Study Programme Report?

The Study Programme Report provides updated information which is important for the purposes of Quality Assurance and is published annually by the University of Bologna.

The main aspects of the teaching programme are described in detail, with a view to assuring the principle of transparency and promoting self-assessment and continuous improvement processes.

The document provides a concrete overview of the features and results of the Study Programme for students, families, employers and so on.

For example, regarding the current issue of employment, it describes the learning outcomes and career opportunities; it also includes statistics on the percentage of employed graduates (D.4. Employment situation).

The document is organised into five sections and a glossary:

## A. Presentation and prospects

Key information on the Study Programme, including the expected learning outcomes, career opportunities and further studies.

## B. Teaching and Learning

The updated course structure diagram with the full titles and listings of the course units and the latest published lecture timetable.

## C. Resources and services

The list of teaching staff and their relative curricula, the offices (secretariats), services (work placements) and infrastructures (libraries, laboratories) available to students.

## D. The Study Programme in Figures

Key data shows how many students are enrolled, how many have been assigned additional learning requirements, how many drop out after the first year, how many graduate in line with the programme schedule, the opinions of attending and graduating students on the teaching programmes and information concerning graduate employment.

## E. Find out more: the quality of your Study Programme

How the quality system applied to your Study Programme works. The quality system of your Study Programme is a set of processes and responsibilities adopted to guarantee the quality of all Study Programmes at the University of Bologna.

## NOTES:

- Reports are available for all Study Programmes for which it is possible to enrol in the first year in academic year 2012/2013: the information and data provided is as updated as possible.
- Sections A, B and C provide data for the academic year 2012/2013.
- Section D presents data regarding the Study Programmes in the last three academic years.
- The information and data were taken from the University databases and the reports published by the [Statistical Observatory of the University of Bologna](#) and [AlmaLaurea](#), and are updated to **15 June 2012**.

## A. PRESENTATION AND PROSPECTS

*This section presents the key information concerning the Study Programme, including the expected learning outcomes, career opportunities and further studies, updated to the academic year 2013/2014.*

### A.1. PRESENTATION

*This paragraph provides information on the specific learning outcomes of the Study Programme and the curriculum.*

The degree programme in Techniques in the Biomedical Laboratory forms healthcare professionals with in-depth knowledge of laboratory sciences and techniques, with duties attributed by decree of the Ministry of Health no. 745 of 26 September 1994 and amendments.

Biomedical Laboratory Technicians work autonomously in analytical and research laboratories carrying out biomedical and biotechnological analyses, and in particular in biochemistry, microbiology, parasitology and virology, pharmaco-toxicology, immunology, clinical pathology, haematology, cytology and histopathology, immunohistopathology and molecular biology. These professional competencies are achieved through a study programme which includes a solid grounding in preparatory subjects (mathematics, physics, chemistry, statistics), biological subjects (biological chemistry, biology, molecular biology, genetics, cytology, human anatomy and physiology), and biomedical subjects (general pathology), which also help to acquire the typical scientific analysis methods and methodological procedures.

This knowledge is integrated by solid knowledge of different methods used in different laboratory medicine fields (pathological anatomy, clinical biochemistry, clinical pathology, microbiology and virology, parasitology, haematology, immunology, immuno-haematology, genetics and molecular biology), as well as the learning of bio-computing methods for the purposes of organising and consulting clinical, health and scientific databases and case history archives.

In order to work autonomously, graduates will also gain excellent knowledge of the operation and principles of use of laboratory instruments and understand laboratory organisation and management, including specific Italian and European legislation.

For this purpose, ample space is dedicated to learning the operating principles of analytical instruments and processes: the three-year study programme includes ample laboratory work and periods of internship.

A specific feature of this degree programme is the possibility to carry out the internship, an essential element of the professional training, in a wide range of facilities. This is thanks to the agreements signed by the university with important and prestigious healthcare and veterinary institutes.

The wide range of internship opportunities allows graduates to broaden their cultural horizons and use of the acquired skills.

### A.2. ADMISSION REQUIREMENTS

*This paragraph provides information on the knowledge required for admission to the Study Programme.*

#### **TEACHING REGULATIONS FOR THE DEGREE COURSE IN BIOMEDICAL LABORATORY TECHNIQUES**

##### **- Normative Section -**

##### **Art.1 Admission Requirements**

###### **1. Admission requirements and evaluation**

The degree course is a restricted-access programme according to the provisions of the law. The number of students to be admitted is determined by the Ministry of Education, University, and Research (MIUR) yearly on a national basis. An admission test is planned according to the selection methods and the schedule planned in the call for applications for the healthcare professions published yearly on the Faculty website.

To be admitted to the degree course it is necessary to hold a five-year secondary school diploma or a foreign qualification considered equivalent.

Furthermore, it is necessary to have acquired adequate knowledge and competences, as stated in the teaching prospect of the degree course and planned yearly by the ministerial decree related to the admission tests for the restricted-access degree courses planned on a national basis.

The number of students that can be admitted to the degree course, the date of the admission test, the contents and the modalities of the selection process will be published yearly in the call for applications.

###### **1. Evaluation of knowledge**

The knowledge and the competences required for the admission are evaluated positively with the achievement of a minimum score in the admission test, as follows:

**20** for students that participate for the slots available for Italian citizens, European citizens, and equivalent categories;

**5** for students that participate for the slots available for non-European citizens resident abroad, according to the provisions of the law.

The verification exams for the evaluation of the knowledge and the competences will take place yearly before 31 January.

### 1. Compulsory Additional Teaching Activities and their verification

The enrolled students who do not achieve the minimum score in the admission test will be assigned to comply with a Compulsory Additional Teaching Activity (CATA) to pass before the end of the first year of the course of studies:

#### Acquisition of basic notions

The Compulsory Additional Teaching Activity is accomplished by passing the following exams:

#### Course of **Biology and Biochemistry**

Should the students have not achieved the CATA before the term scheduled by the Academic Bodies and published on the University website, they have to repeat the first year.

#### 1. Exemption from the verification of the knowledge and the competences

Exemption from the verification of the knowledge and the competences is permitted only for those students that have earned all the credits in the scientific-disciplinary sectors (SDS) previously in their career as follows:

- **BIO/13 (applied biology): 3 credits**

- **BIO/10 (biochemistry): 3 credits**

For those students enrolled in a degree course regulated according to the University system prior to D.M. 509/09, the exemption will be approved if at least one exam related to the contents of one of the above-mentioned SDS have been passed.

For this type of exemption a request must be placed by the student and handed to the Office of the Registrar with the admission form.

## A.3. LEARNING OUTCOMES

*This paragraph provides information on the knowledge and skills students will have acquired by the end of the Programme.*

### **Knowledge and understanding**

Graduates:

- possess basic knowledge of chemistry, mathematics, physics and statistics, general and cell biology, structure and function of the human body, evolution and general genetics;
- understand the aetiology of disease, relative pathogenetic mechanisms, fundamental reactions to pathogens and consequences for the body;
- possess strong basic and advanced knowledge of analytical techniques in different fields of laboratory medicine (pathological anatomy, clinical pathology, microbiology, bacteriology and virology, parasitology, haematology, immuno-haematology and genetics);
- they also possess specific and indispensable competencies in the appropriate use of Personal Protection Devices (P.P.D.) laid down in the regulations in force concerning the handling and correct disposal of organic materials, as well as the use and disposal of laboratory reagents in total safety;
- understand the principles of clinical pathology underlying the profession and the methods used to identify and quantify the reference parameters and their clinical meaning;
- possess basic knowledge of computing and computer applications in the laboratory, particularly concerning data and clinical record archiving;
- understand the national and international political and economic framework, legislation and problems of the application of laboratory techniques.

The aforementioned knowledge and ability to understand are gained in lectures, individual laboratory exercises, which involve clinical and experimental protocols, classroom exercises supervised by professors and tutors, as well as personal study of the subjects included in the degree programme in the following core and complementary subject areas:

BIO/09; BIO/10; BIO/12; BIO/13; BIO/14; BIO/16; BIO/17; FIS/07; INF/01; ING-INF/05; ING-INF/06; IUS/07; MED/01; MED/02; MED/03; MED/04; MED/05; MED/06; MED/07; MED/08; MED/09; MED/13; MED/15; MED/17; MED/36; MED/41; MED/42; MED/43; MED/44; MED/45; MED/46; M-PSI/01; SECS-P/10; VET/06

Learning outcomes are assessed mainly through written and oral exams, progress tests, reports on laboratory internships.

The methodological choices and teaching methods, contact with professors (during lectures but particularly during laboratory work), learning assessment (oral exams, written assignments and personal study), allow students to increase their own knowledge and develop their ability to understand.

### **Applying knowledge and understanding**

Graduates:

- are able to apply knowledge in the field of microbiology, pharmacy techniques, pathological anatomy, animal prophylaxis, transfusional medicine, haematology, clinical pathology and molecular biology;
- are able to recognise and accept the suitability of different samples, manage the preparation and treatment using special instruments and reagents and technically assess the results, according to the specific characteristics and procedures adopted in each sector;
- according to the type of sample, they know and apply cutting techniques, manual or automatic research in samples, colouring, typing;
- in the field of Microbiology, they are able to sow biological materials in cultures, read plates following growth, identify colonies and carry out antibiograms, manual serology techniques, automated techniques for the research of antigens and bacterial and/or viral

antibodies and relative confirmation tests, the most advanced molecular biology techniques for qualitative and quantitative research of viral nucleic acids;

- in the field of Pharmacy techniques, they are able to prepare medicinal stocks and buffer solutions, colorants and reagents, set up standard and customised nutritional mixtures using aseptic techniques and automatic filling systems;
- in the Pathological Anatomy field, they are able to autonomously manage the preparation and treatment of histological samples, including intraoperative analyses, as well as cytological and biopsy samples using specific instruments and reagents also in emergency situations; they can autonomously apply both manual and automatic histochemical colouring techniques; they are able to manage and organise immuno-histochemical departments; they know and autonomously apply bone tissue treatment techniques;
- in the field of animal prophylaxis, they are able to autonomously prepare and test the effectiveness of rapid serum agglutination and slow serum agglutination, immunodiffusion in agar, complement fixing, Elisa and indirect immunofluorescence techniques; they are able to autonomously manage the most common microbiological analyses on food samples or environmental matrices for both qualitative and quantitative determinations;
- in the field of Transfusional Medicine, they understand and autonomously apply statutory regulations concerning the parameters for donation and management of blood components; they understand and apply procedure and techniques for the management and preparation, preservation and labelling of blood and blood components, management techniques and processes for blood and blood component requirements and assignment, DNA extraction techniques, HLA (human leukocyte antigen) typing, PCR methods (polymerase chain reaction), serological study techniques, cross-matching in microlymphocytotoxicity and HLA antibodies; they know and apply management techniques for autoimmune and neonatal blood diseases;
- in the Haematology field, they are able to identify suitable anticoagulants for different types of analysis, carry out reticulocyte evaluation tests, cytocentrifuge samples for neoplastic cell research using pleural liquids, fluids and pericardial liquid, enrichment of peripheral and marrow blood and cryoglobulin tests;
- in Clinical Pathology, they autonomously control the quality of instruments and decide on the validity of the analyses; they process samples and assess results according to the technical validation of the data, considering as far as they are competent the congruity of the results; they are able to identify instrumental malfunctions and carry out ordinary and basic extraordinary maintenance;
- in Molecular Biology, they are able to prepare and organise aseptic paths to avoid RNase contamination; they can carry out the main methods of DNA and RNA extraction, prepare agar gel, assess the electrophoretic run of amplified products, apply genomic DNA amplification and sequencing techniques as well as genetic cloning techniques;
- they autonomously manage appropriate quality control of procedures and the results of analyses, with technical validation where required;
- they are able to assess and adopt the appropriate safety measures according to the type of laboratory and substances handled, using all specific environmental protection devices.

The ability to apply knowledge and understanding is achieved through laboratory work carried out in the degree programme, in agreement with public and private laboratory facilities. The outcomes are achieved also through single-station clinical internships: students have the possibility to study, understand and personally and autonomously apply clinical and experimental protocols under the supervision of professors and specialist tutors, due to the restricted access to the programme and according to the number of internship facilities available. The programme teaching staff continuously update their knowledge in order to offer innovative clinical and experimental protocols also concerning avant-garde research topics, broadening the students' ability to apply knowledge. The internship constitutes a further opportunity for students to apply their knowledge and have contact with the world of work. The internship allows students to directly apply and further study the techniques learned during lectures. The internship is assessed through the analysis of the results of the clinical and experimental protocols using assessment forms drawn up by the internship tutor aiming not only to assess the level of technical learning but also to strengthen the achievement of the set outcomes.

### **Making judgements**

Graduates:

- are able to work autonomously to implement the clinical and experimental protocols;
- are able to gather and interpret relevant scientific data from clinical and experimental observations;
- are able to analyse and summarise scientific data information for the purposes of dissemination;
- are able to offer autonomous judgements concerning social, scientific, ethical issues of experimental and clinical laboratory work and professional activities;
- are able to adapt to different working environments and topics;
- are able to retrieve and review sources of information, data and literature in their specific field;
- work professionally and autonomously, with responsibility for the laboratory facilities they work in;
- are responsible for the correct fulfilment of analytical procedures and their own tasks;
- check that the services delivered correspond to the set indicators and standards;
- are responsible for the correct functioning of the equipment used and carry out ordinary maintenance and minor operating repairs;
- are responsible for keeping abreast of the constant evolution in technology and instruments.

Judgement skills are particularly developed during internships, which provide for individual and autonomous laboratory work, and through personal assignments carried out in some course units, at the end of the internship and for the final examination. Students also



develop judgement skills concerning social and ethical issues linked to technologies above all in the course units concerning Bioethics and Biotechnologies, as well as legal subjects.

#### **Communication skills**

Graduates:

- are able to collaborate in working groups, particularly for the design of experimental and clinical laboratory work;
- are able to effectively use written and oral English in the field of new laboratory technologies;
- possess the relational and communication skills needed to work in international contexts;
- are able to produce technical and scientific reports in both Italian and in English.

Written and oral communication skills are developed during laboratory internships, which include written assignments and discussion of the results of protocols in group work. The compulsory internship also develops similar skills. The internship may be carried out in foreign facilities with which agreements have been signed or in Italian research institutes or the laboratories of the University of Bologna, which also operate internationally, allowing students to develop their relational skills also in these contexts.

English is learned and assessed through e-learning. Students have the opportunity to study both written and oral English in internships abroad and through the study of the scientific literature which is used frequently in the programme. Learning skills are further developed in the production of the final internship report and the final examination.

#### **Learning skills**

Graduates:

- are able to work autonomously and pursue lifelong learning throughout their professional careers;
- are able to learn and study further laboratory techniques in order to keep abreast of their own technical and scientific knowledge, also through further post-graduate studies;
- are able to work by objectives.

Learning skills are developed throughout the study programme, both through personal study and contact with professors during oral exams and the revision of written assignments, as well as through the organisation of experimental protocols during laboratory work, under the supervision of professors and tutors.

Fundamental opportunities for broadening learning skills are available during the internship and the activities carried out in preparation of the final examination. Learning skills are assessed in various ways in all learning activities, with weight given also to the respect for deadlines throughout the programme, considering the personal data obtained in both clinical and experimental objectives during laboratory internships, assessing the self-learning skills developed during the internship and activities in preparation of the final examination, and the ability to critically discuss scientific topics.

## **A.4. CAREER OPPORTUNITIES**

*This paragraph provides information on the occupational profile, functions and fields of employment available to graduates of this Programme.*

Biomedical Laboratory technicians are healthcare workers with duties attributed by decree of the Ministry of Health no. 745 of 26 September 1994 and amendments.

Functions:

- autonomous and professional technical validation of analytical processes including:
  - pre-analysis: request and sampling validation;
  - analysis: analytical validation and analytical validation of acceptability;
  - post-analysis: biological validation, plausibility validation and medical report plausibility validation
- autonomous work in analysis and research laboratories carrying out biomedical and biotechnological analyses, and in particular biochemistry, microbiology, parasitology and virology, pharmaco-toxicology, immunology, clinical pathology, haematology, cytology and histopathology, immunohistopathology and molecular biology;
- autonomous professional and technical services in direct collaboration with other graduate professional stakeholders with various operational responsibilities;
- within the laboratory, responsibility for the correct execution of analytical procedures and operations, in the application of working protocols laid down by the laboratory managers;
- control of the compliance of services delivered with the indicators and standards set by the laboratory managers; control of the correct functioning of the equipment used;
- execution of analyses and/or preparation of technological materials to which recombinant DNA, genomic, biochemical, microbiological, biomolecular, cellular, histological and histochemical and biocomputing methods are applied;
- analysis and use of biological and technological information contained in databases, using biocomputing programmes;
- execution of procedures for product and process transfer from research to effective application;
- ordinary maintenance and elimination of any problems which could arise during these procedures;
- participation in planning and organisation of work within the laboratory;
- tutoring of students during experimental learning;
- design and implementation of communication and scientific dissemination activities.

Biomedical Laboratory technicians may work as employees or on a freelance basis in public and private laboratories authorised by law including:

- Public and private research bodies and universities.
- Health services
- Biotechnological, chemical, pharmaceutical, food processing and agrichemical industries
- Public and private analytical and quality control laboratories
- Animal prophylaxis institutes
- Assisted reproduction centres
- Scientific dissemination and communication agencies.

The degree programme project has been submitted to selected external stakeholders in order to receive their opinions and feedbacks on the learning outcomes and the professional profiles.

## A.5. OPINION OF SOCIAL PARTNERS AND POTENTIAL EMPLOYERS

*This paragraph describes the outcome of the consultation with the representative employment and trade organisations.*

This information is not available in English at this time.

## A.6. FURTHER STUDIES

It gives access to second cycle studies (laurea specialistica / magistrale) and master universitario di primo livello.

## B. TEACHING AND LEARNING

*This section describes the updated course structure diagram (for academic year 2013/2014), with the full titles and listings of the course units and the latest published lecture timetable.*

### B.1. COURSE STRUCTURE DIAGRAM

*The link takes you to the Study Programme course structure diagrams. You can also access to each course unit content.*

- [Study plan: all course units in the programme](#)

### B.2. CALENDAR AND LECTURE TIMETABLE

*The links take you to the teaching calendar (exam session and final examination session) and the lecture timetable (in Italian).*

- [Lecture timetable](#)
- [Exam sessions](#)
- [Final examination sessions](#)

## C. RESOURCES AND SERVICES

*This section provides a list of teaching staff and their relative curricula and and description of the services available to students for the academic year 2013/2014.*

### C.1. TEACHERS

*The paragraph lists the lecturers who teach in the Study Programme: from here you can access the personal web pages of each one. Information updated to 28 May 2013 (in Italian).*

#### **Permanent teaching staff:**

<a href="#">Battista, Giuseppe</a>	<a href="#">Derenzini, Massimo</a>	<a href="#">Martinelli, Giovanni</a>	<a href="#">Scarani, Paolo</a>
<a href="#">Bergamaschi, Anna</a>	<a href="#">Di Nino, Gianfranco</a>	<a href="#">Mazzella, Giuseppe</a>	<a href="#">Testa, Claudia</a>
<a href="#">Bonfiglioli, Roberta</a>	<a href="#">Dormi, Ada</a>	<a href="#">Montanaro, Lorenzo</a>	<a href="#">Tinti, Anna</a>
<a href="#">Boriani, Giuseppe</a>	<a href="#">Frabetti, Flavia</a>	<a href="#">Pantaleo, Maria Abbondanza</a>	<a href="#">Todeschini, Paola</a>
<a href="#">Caffara, Monica</a>	<a href="#">Franceschi, Claudio</a>	<a href="#">Pasquinelli, Gianandrea</a>	<a href="#">Tomassetti, Vincenzo</a>
<a href="#">Caramelli, Elisabetta</a>	<a href="#">Gaiardi, Margherita</a>	<a href="#">Pezzetti, Furio</a>	<a href="#">Tonon, Caterina</a>
<a href="#">Cavo, Michele</a>	<a href="#">Gambineri, Alessandra</a>	<a href="#">Piccaluga, Pier Paolo</a>	<a href="#">Treré, Davide</a>
<a href="#">Cenacchi, Giovanna</a>	<a href="#">Gibellini, Davide</a>	<a href="#">Pierini, Giovanni</a>	<a href="#">Varani, Stefania</a>
<a href="#">Ciani, Elisabetta</a>	<a href="#">Iotti, Stefano</a>	<a href="#">Pizzi, Carmine</a>	<a href="#">Zannoli, Romano</a>
<a href="#">De Giovanni, Carla</a>	<a href="#">Manfredi, Roberto</a>	<a href="#">Re, Maria Carla</a>	
<a href="#">De Pasquale, Viviana</a>	<a href="#">Marcelli, Emanuela</a>	<a href="#">Russo, Paolo Maria</a>	

#### **Contract teaching staff:**

<a href="#">Aiello, Gianni Maurizio</a>	<a href="#">Perugini, Simonetta</a>
<a href="#">Bedosti, Sonia</a>	<a href="#">Ripalti, Alessandro</a>
<a href="#">Bontadini, Andrea</a>	<a href="#">Rossi, Cesare</a>
<a href="#">Buzzi, Marina</a>	<a href="#">Stancari, Alessandra</a>
<a href="#">Caravita, Cristina</a>	<a href="#">Zanichelli, Lucio</a>
<a href="#">Fiorentino, Michelangelo</a>	
<a href="#">Furlini, Giuliano</a>	
<a href="#">Lama, Laura</a>	
<a href="#">Mantovani, Vilma</a>	
<a href="#">Mignatti, Valeria</a>	
<a href="#">Moni, Cristina</a>	

### C.2. STUDENT SERVICES: OFFICES

#### C.2.1. FUTURE STUDENTS

*The link take you to the webpage which provides specific information about the offices and the services for the future students (in Italian).*

- [Future students](#)

#### C.2.2. ENROLLED STUDENTS

*The link take you to the webpage with the information on the offices and the services for the enrolled students (in Italian).*

- [Enrolled students](#)

#### C.2.3. INTERNATIONAL STUDENTS

*The link take you to the webpage with the information on the offices and the services for the international students (in Italian).*

- [International students](#)

#### C.2.4. GRADUATES

*The link take you to the webpage with the information on the offices and the services for the graduates (in Italian).*

- [Graduates](#)

## D. THE STUDY PROGRAMME IN FIGURES

Information on students' starting their university careers, how many students are in line with the regular programme, opinions of students and graduates on the teaching programmes and information concerning graduate employment.

This section provides the data of the last academic years for the Study Programme (SP) and a comparison with similar Study Programmes. The University of Bologna has divided its Study Programmes into four groups:

- **BIOMEDICAL** group: Study Programmes of the Schools of Pharmacy, Biotechnology and Sport Science; Medicine; Agriculture and Veterinary Medicine
- **SCIENTIFIC-TECHNOLOGICAL** group: Study Programmes of the Schools of Engineering and Architecture; Sciences
- **SOCIAL SCIENCES** group: Study Programmes of the Schools of Economics, Management, and Statistics; Law, Political Sciences
- **HUMANITIES** group: Study Programmes of the Schools of Arts, Humanities, and Cultural Heritage; Foreign Languages and Literatures, Interpreting and Translation; Psychology and Education

The section presents the results of the Study Programme for the last three academic years.

Main data shows how many students enrolled, the number of students assigned OEA, how many drop out after the first year, how many graduate in line with the programme schedule, the opinions of attending and graduating students on the teaching programmes and information concerning graduate employment.

The information and data presented in this section, updated to 28 May 2013, were taken from University databases and [AlmaLaurea](#).

Study Programmes may be subject to degree programme system modifications from one academic year to the next, and the data provided in this section may refer to a programme with a slightly different system to the one currently running (such as programme title, course structure diagram and list of lecturers). However, indicatively the data presents the general trend of the Study Programme over the past three years.

Most of the Study Programmes running at the University of Bologna have been reformed in compliance with DM 270/04, most of them from the academic year 2008/2009. In the reports provided for these Programmes, paragraph D.5. refers to the Study Programmes as they were presented prior to the reform.

### D.1. STUDENTS STARTING THEIR UNIVERSITY CAREERS

Characteristics of incoming students at the beginning of their university careers. Tables and graphs provide information on the number of **registered students**, focusing on the characteristics of the students, results of any entrance tests and the students assigned any **additional learning requirements**.

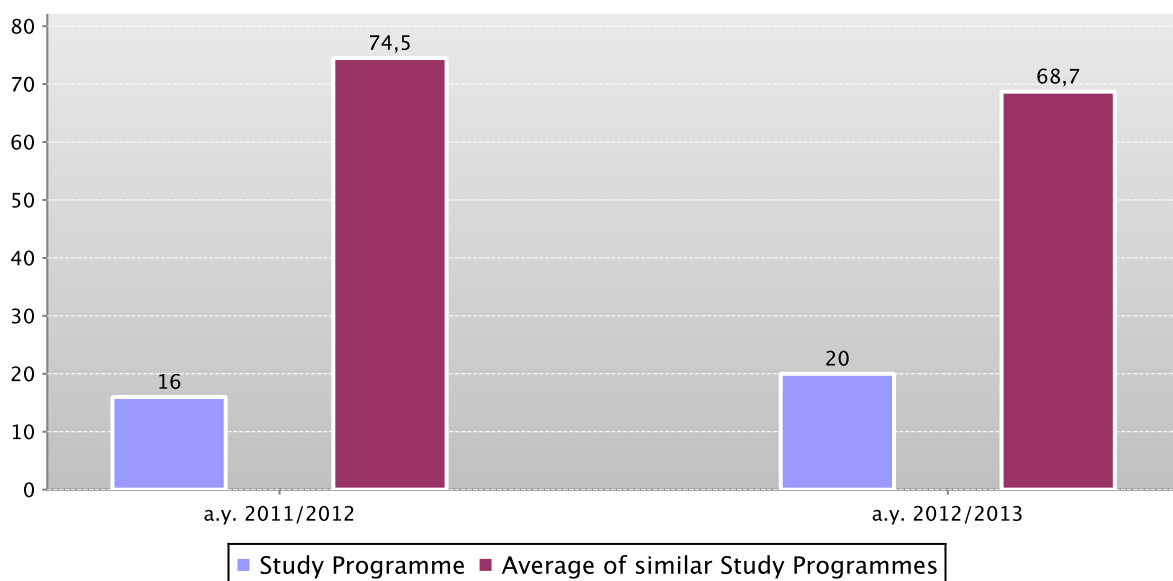
#### D.1.1. ENROLMENTS AND REGISTRATIONS

The **graph** shows the number of **students enrolled in the 1st year** compared with the **average of similar Study Programmes** (which belong to the same group).

In addition, the **table** shows the total number of **registered students** and the total number of enrolled students.

Data of the Study Programme is compared with the average of the Study Programmes of **average of similar Study Programmes** (which belong to the same group) for the indicated academic years.

First year enrolments



	a.y. 2011/2012			a.y. 2012/2013		
	Registered students	N. first year enrolments	Total N. enrolled students	Registered students	N. first year enrolments	Total N. enrolled students
Study Programme	5	16	16	12	20	32
Average of similar Study Programmes	58,1	74,5	106,6	51,8	68,7	104,4

See data of previous academic years – Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170) [paragraph D.5.1.1.](#)

## D.1.2. ADDITIONAL DATA ON STUDENTS' STARTING THEIR UNIVERSITY CAREERS

### D.1.2.1. CANDIDATES REGISTERED FOR THE ENTRANCE EXAM

The number of students sitting the [entrance exam](#) for the Study Programme. Concerns the programmes with restricted access. The methods of managing the call for applications and the list of candidates, including the methods for filling any unclaimed places, may vary from year to year.

The **table** shows the number of places available for the study programme, the number of candidates enrolling for the exam, the number sitting the exam and the percentage of students sitting the exam compared to the number of places available.

For all programmes with restricted access, candidates are required to sit an entrance exam and there are a limited number of places available. The entrance exam is a test which is used to draw up a graded list of candidates; students may enrol in the programme according to their place in the list. The methods of managing the call for applications and the list of candidates, including the methods for filling any unclaimed places, may vary from year to year. The test may be specific to a Degree Programme or may be part of a single exam covering several programmes from the same university or from other universities (during the registration the students should indicate their first choice).

The following definitions apply:

**Available places** = the number of places laid down in the call for applications to the Study Programme, or determined by subsequent legal provisions; these exclude any additional places reserved according to special provisions of the programme (e.g. for international study programmes, they do not include places for foreign students selected from other universities; for all programmes with restricted access regulated nationally, these do not include the places reserved for transferring students).

**Number of candidates for the exam** = number of students registered for the exam indicating the study programme as their first choice;

**Number of participants in the exam** = number of students participating in the exam indicating the study programme as their first choice;

**Number of participants in the exam for every available place** = number of students participating in the exam who indicated the study programme as their first choice as a ratio of the number of places available on the programme.

	Number of places available (a)	Candidates registered for the exam	Candidates sitting the exam (b)	Number of candidates sitting the exam per place available (b/a)
a.y. 2011/2012	22	80	78	3,5
a.y. 2012/2013	22	74	71	3,2

See data of previous academic years – Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170) [paragraph D.5.1.2.1.](#)

## D.1.2.2. INCOMING STUDENTS

Geographic origin, type of high school certificate, age and gender of students.

Data shows a homogeneous group of students (**cohort**) which started together their academic career. Students which have passed to an other Study Programme, transferred from an other university, or registered to a 2nd degree are not included.

The **tables** show the number, geographic origin, gender, age, type and grade of high school certificate of students enrolling in the degree programme.

Data of the Study Programme is compared with the average of the Study Programmes of **average of similar Study Programmes** (which belong to the same group) for the indicated academic years.

		Registered students	Geographic origin					Gender		Average age of registered students		
			Students coming from the province of the Study Programme site	Students coming from other provinces where Unibo has a site	Students coming from other provinces of Emilia Romagna region	Students coming from other Italian regions	Students coming from abroad	M	F	19 or less	20 - 24	25 or more
Students 2011/2012	Study Programme	5	40,0%	40,0%		20,0%		40,0%	60,0%	20,0%	60,0%	20,0%
	Average of similar Study Programmes	58,1	36,9%	22,9%	9,7%	27,4%	3,0%	41,8%	58,2%	65,1%	29,1%	5,9%
Students 2012/2013	Study Programme	12	50,0%	25,0%		25,0%		33,3%	66,7%	66,7%	25,0%	8,3%
	Average of similar Study Programmes	51,8	35,6%	23,4%	10,3%	28,3%	2,4%	48,4%	51,6%	63,7%	29,7%	6,5%

		Vocational schools	High school certificate				Grade of High school			
			Technical Colleges	High school specializing in education and in psycho-pedagogical science	High schools specializing in classical studies, modern languages, science education	Other Italian or foreign high schools	Grade ranging from 60 to 69	Grade ranging from 70 to 79	Grade ranging from 80 to 89	Grade ranging from 90 to 100
Students 2011/2012	Study Programme		40,0%		60,0%		20,0%	60,0%		20,0%
	Average of similar Study Programmes	8,1%	24,2%	9,5%	50,5%	7,7%	26,6%	32,3%	21,6%	17,7%
Students 2012/2013	Study Programme		16,7%		58,3%	25,0%	16,7%	16,7%	33,3%	8,3%
	Average of similar Study Programmes	8,6%	23,2%	7,2%	54,0%	7,0%	22,1%	34,6%	23,1%	15,0%

See data of previous academic years – Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170) [paragraph D.5.1.2.2.](#)



### D.1.2.3. ADDITIONAL LEARNING REQUIREMENTS

Students on the programme assigned **additional learning requirements** (OFA). OFA are learning requirements assigned to enrolled students who have not demonstrated the full possession of the entrance requirements. The assessment methods of students' initial preparation and the fulfilment of the OFA are described in the Study Programme Regulations, and may change each year. Students not completing the additional learning requirements are obliged to re-enrol in year 1 as repeating students.

The **table** shows the number of **registered students**, the number of students assigned OFA, the number who fulfilled them, the percentage of students assigned the OFA compared to the number of enrolled students and the percentage fulfilling the OFA compared to those assigned them.

	Registered students (a)	Students assigned OFA (b)	Students who fulfilled OFA (c)	% of students assigned OFA compared to the number of enrolled students (b/a)	% of students fulfilling the OFA compared to number of students assigned (c/b)
Students 2011/2012	5	0			
Students 2012/2013	12	0			

\*Note: At the time of publication of this report the number of students fulfilling the OFA can be measured for a.y. 2009/2010 and a.y. 2010/2011 only.

## D.2. REGULARITY OF STUDIES

*Insight into the regularity with which the students pass their exams.*

*Graphs and tables provide information on the number of students who leave the programme after the first year and the number of regular graduates, focusing on the number of credits obtained at the end of the first year, on the exams passed and average grade achieved for each course unit.*

### D.2.1. STUDENTS LEAVING THE PROGRAMME BETWEEN YEARS 1 AND 2

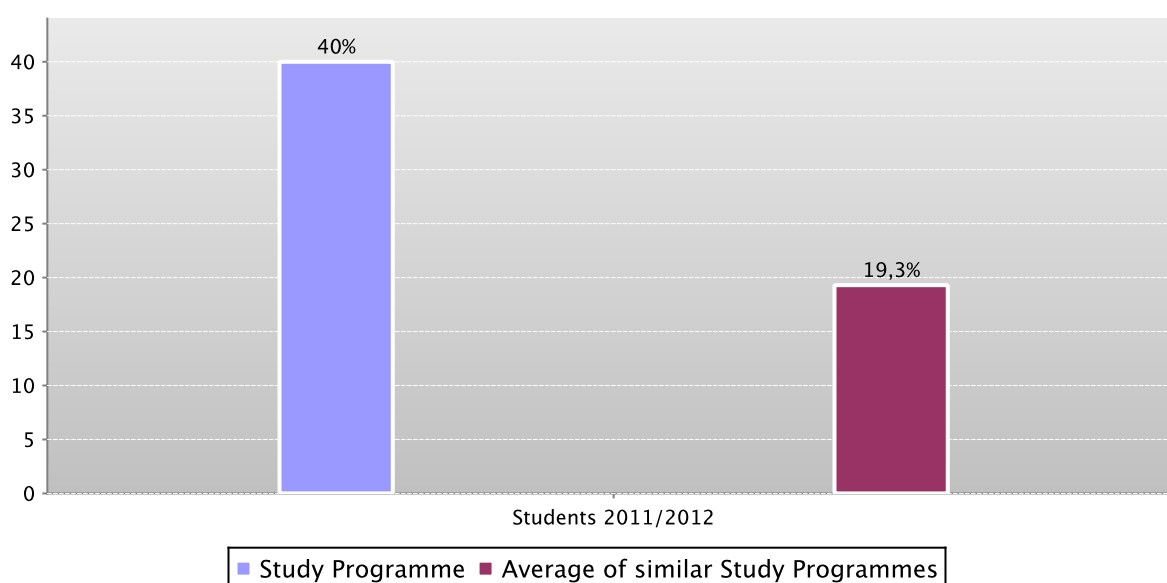
Here the number of students leaving the Study Programme is shown.

The **graph** shows the percentage of students who leave the programme after the first year compared to the average of similar Study Programmes (belonging to the same group).

The **table** shows the registered students, the percentage of students leaving the programme who pass to a different Study Programme in the same university, transfer to another university or withdraw from studies, as well as the enrolled repeating students and those enrolled in the second year.

The Study Programme data is compared with the average of similar Study Programmes of (which belong to the same group), for students registered in the indicated academic years.

Percentage of withdrawals between years 1 and 2



	Registered students	% withdrawals	% passages and transfers	% repeating students	Students enrolled in the second year
Students 2011/2012 Study Programme	5	40,0%	20,0%	0,0%	2
Average of similar Study Programmes	58,1	19,3%	12,9%	0,4%	39,1

See data of previous academic years – Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170) [paragraph D.5.2.1](#).

### D.2.2. REGULAR GRADUATES

The new Study Programme running in compliance with D.M. 270/04 has not produced any graduates yet.

See data of previous academic years – Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170) [paragraph D.5.2.2](#).

### D.2.3. ADDITIONAL DATA ON REGULARITY OF STUDIES

#### D.2.3.1. CREDITS OBTAINED BY STUDENTS IN THE 1ST YEAR

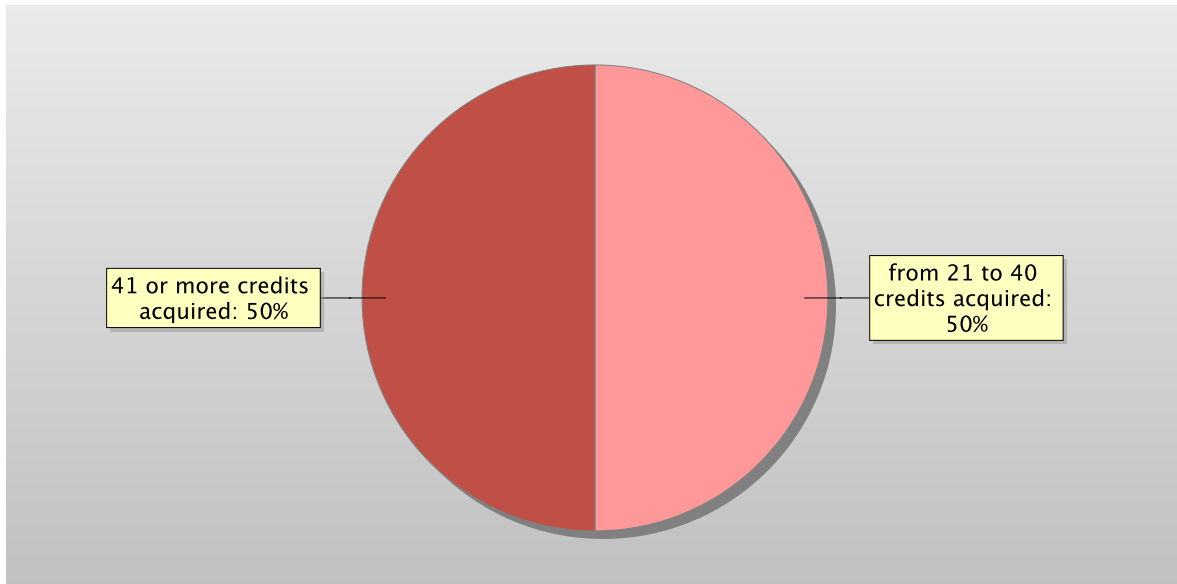
This offers an insight into how regularly students pass their exams.

The **graph** shows the distribution of the students according to the number of **credits** obtained at the end of the first year.

In addition, the **table** shows the number of students registered at the second year and average **credits** obtained during the first year.

The Study Programme data is compared with the average of **similar Study Programmes** (which belong to the same group) for the indicated academic years.

Distribution of the students in 2011/2012 according to the number of credits obtained at the end of the first year\*



	Study Programme	Students enrolled in the 2nd year	% students with *				Average credits per student
			0 credits acquired	from 1 to 20 credits acquired	from 21 to 40 credits acquired	41 or more credits acquired	
Students 2011/2012	Average of similar Study Programmes	39,1	4,9%	18,5%	50,0%	50,0%	40

\*Note: by convention, credits are considered to be obtained by students by 31st October of the year following the year of enrolment. See data of previous academic years – Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170) [paragraph D.5.2.3.1.](#)

### D.2.3.2. EXAMS PASSED AND AVERAGE GRADE

The **table** shows number of exams passed and average grade achieved for each course unit in the calendar year 2011. Marks for the exams passed are expressed out of thirty.

The data refers to the course unit code and therefore includes the various branches of the programme divided into channels or sub-groups, divided by letter.

It considers all subjects for which a grade is assigned, and therefore excludes all those to which a pass/fail score is allocated.

*Data of the Study Programme D.M. 270/04 Tecniche di laboratorio biomedico (abilitante alla professione sanitaria di tecnico di laboratorio biomedico) (code 8484)*

	N. of exams passed	Average grade *
19751 TIROCINIO I	12	29,3
20821 FISICA STATISTICA E INFORMATICA (C.I.)	3	
39177 ANATOMIA UMANA, ISTOLOGIA E FISIOLOGIA (C.I.)	5	
39265 SCIENZE UMANE E DEL LAVORO (C.I.)	4	
39271 MEDICINA LEGALE E DELLA PREVENZIONE (C.I.)	12	29,6
39275 PATOLOGIA GENERALE, GENETICA MEDICA E ONCOLOGIA MEDICA (C.I.)	3	
90004 BIOLOGIA E BIOCHIMICA (C.I.)	7	28,1

\* Note: no average grade is given if the number of exams passed is less than or equal to 5.

See data of Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170), [paragraph D.5.2.3.2](#).

## D.3. OPINIONS OF GRADUATES AND ATTENDING STUDENTS

*Opinions of graduates on the Study Programme.*

*Tables and graphs provide information on the number of graduates who expressed positive opinions on the Study Programme, focusing on opinions expressed by attending students on course units.*

### D.3.1. OPINION OF GRADUATES

The new Study Programme running in compliance with D.M. 270/04 has not produced any graduates yet.

See data of previous academic years – Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170) [paragraph D.5.3.1](#).

## D.3.2 ADDITIONAL DATA ON OPINIONS OF STUDENTS

### D.3.2.1. OPINION OF ATTENDING STUDENTS

The **graph** shows the percentage of attending students who responded positively to the question in the questionnaire: “Are you generally satisfied with this course unit?” in academic year 2011/2012.

The **table** also shows the number of completed questionnaires.

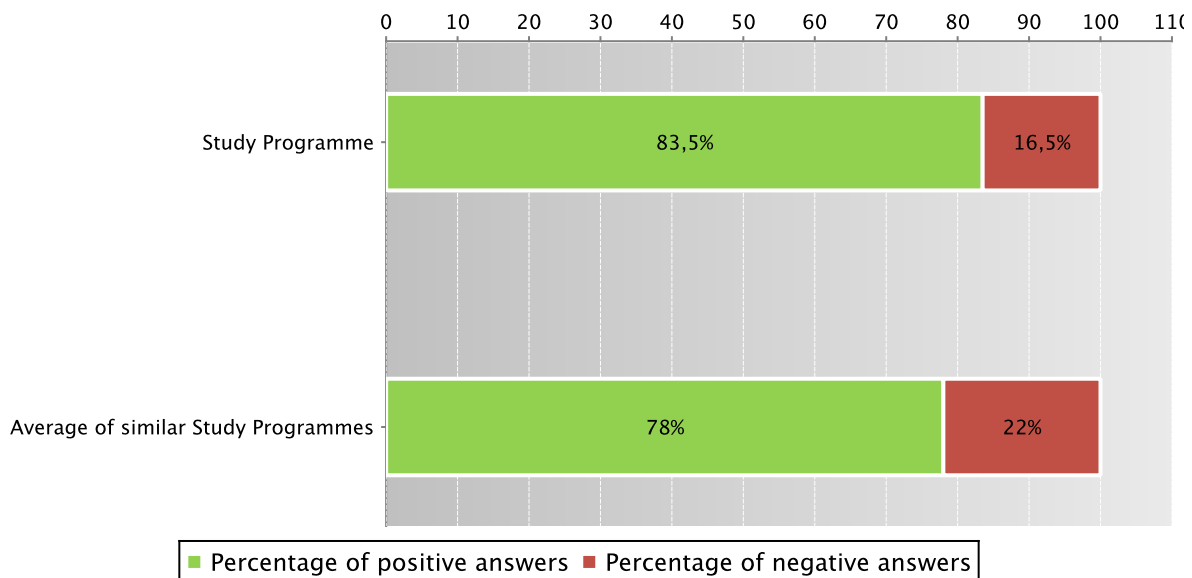
The Study Programme data is compared with the [average of similar Study Programmes \(which belong to the same group\)](#), for the indicated academic years.

The data concerning the students' opinion refers to the opinions of those attending lessons, whether they are enrolled in the current programme or a Study Programme running under pre-reform regulations (under D.M. 509).

For the University of Bologna the survey and subsequently analysis of the opinions of students attending the course is cared by Academic Affairs Division - Quality Assurance Department and Control and Finance Division - Support Planning and Evaluation Department. The overall results and the methods of collection and analysis are described in the document published online on the [Statistical Observatory of the University of Bologna](#) (see the note in the glossary).

Students who responded positively to the question: “Are you generally satisfied with this course unit?” in academic year 2011/2012

*Data of the Study Programme D.M. 270/04 Tecniche di laboratorio biomedico (abilitante alla professione sanitaria di tecnico di laboratorio biomedico) (code 8484) and of the Study Programme D.M. 509/99 Tecniche di laboratorio biomedico (abilitante alla professione sanitaria di tecnico di laboratorio biomedico) (code 0170)*



Data of the Study Programme D.M. 270/04 *Tecniche di laboratorio biomedico (abilitante alla professione sanitaria di tecnico di laboratorio biomedico) (code 8484)* and of the Study Programme D.M. 509/99 *Tecniche di laboratorio biomedico (abilitante alla professione sanitaria di tecnico di laboratorio biomedico) (code 0170)*

		Number of completed questionnaires	% of positive answers concerning the general satisfaction with the course unit – Question 19
a.y. 2009/2010	Study Programme	211	80,3%
	Average of similar Study Programmes	1059,4	77,4%
a.y. 2010/2011	Study Programme	936	80,5%
	Average of similar Study Programmes	1222	76,8%
a.y. 2011/2012	Study Programme	917	83,5%
	Average of similar Study Programmes	1289,9	78,0%

Symbols:

(\*) When there is a small number of questionnaires, the percentage of positive opinions on overall satisfaction is not presented.

Further information on [Rapporto Opinione degli studenti frequentanti sulle attività didattiche](#) (the content is in Italian).

## D.4. ENTRY INTO THE WORLD OF WORK

*Employment situation of graduates of the Study Programme.*

*Tables and graphs provide information on the employment situation of graduates one year after graduating.*

### D.4.1. EMPLOYMENT SITUATION

Data of Employment situation of graduates of Study Programmes reformed in compliance with D.M. 270/04 have not been collected yet.

See data of previous academic years – Study Programme D.M. 509/99 *Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170)* [paragraph D.5.4.1.](#)

## D.5. INFORMATION ON PRE-REFORM PROGRAMMES (DM 509/99)

## D.5.1. STUDENTS STARTING THEIR UNIVERSITY CAREERS

Characteristics of incoming students at the beginning of their university careers. Tables and graphs provide information on the number of registered students, focusing on the characteristics of the students, results of any entrance tests and students assigned additional learning requirements.

### D.5.1.1. ENROLMENTS AND REGISTRATIONS

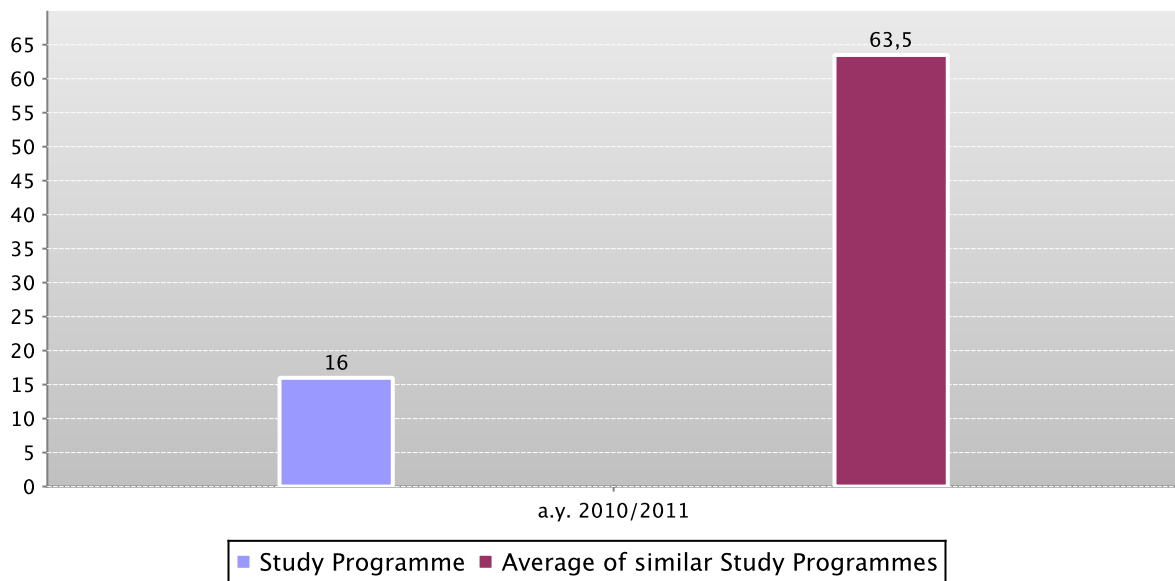
The **graph** shows the number of students enrolled in the 1st year compared with the average of similar Study Programmes (which belong to the same group).

In addition, the **table** shows the total number of registered students and the total number of enrolled students.

Data of the Study Programme is compared with the average of the Study Programmes of average of similar Study Programmes (which belong to the same group), for the indicated academic years.

First year enrolments

Data of the Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170)



Data of the Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170)

	a.y. 2010/2011		
	Registered students	N. first year enrolments	Total N. enrolled students
Study Programme	9	16	60
Average of similar Study Programmes	48,9	63,5	136,8

[Go back to D.1.1. Enrolments and registration](#)

## D.5.1.2. ADDITIONAL DATA ON STUDENTS' STARTING THEIR UNIVERSITY CAREERS

### D.5.1.2.1. CANDIDATES REGISTERED FOR THE ENTRANCE EXAM

The number of students sitting the [entrance exam](#) for the Study Programme. Concerns the programmes with restricted access. The methods of managing the call for applications and the list of candidates, including the methods for filling any unclaimed places, may vary from year to year.

The **table** shows the number of places available for the study programme, the number of candidates enrolling for the exam, the number sitting the exam and the percentage of students sitting the exam compared to the number of places available.

For all programmes with restricted access, candidates are required to sit an entrance exam and there are a limited number of places available. The entrance exam is a test which is used to draw up a graded list of candidates; students may enrol in the programme according to their place in the list. The methods of managing the call for applications and the list of candidates, including the methods for filling any unclaimed places, may vary from year to year. The test may be specific to a Degree Programme or may be part of a single exam covering several programmes from the same university or from other universities (during the registration the students should indicate their first choice).

The following definitions apply:

**Available places** = the number of places laid down in the call for applications to the Study Programme, or determined by subsequent legal provisions; these exclude any additional places reserved according to special provisions of the programme (e.g. for international study programmes, they do not include places for foreign students selected from other universities; for all programmes with restricted access regulated nationally, these do not include the places reserved for transferring students).

**Number of candidates for the exam** = number of students registered for the exam indicating the study programme as their first choice;

**Number of participants in the exam** = number of students participating in the exam indicating the study programme as their first choice;

**Number of participants in the exam for every available place** = number of students participating in the exam who indicated the study programme as their first choice as a ratio of the number of places available on the programme.

*Data of the Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170)*

	Number of places available (a)	Candidates registered for the exam	Candidates sitting the exam (b)	Number of candidates sitting the exam per place available (b/a)
a.y. 2010/2011	22	79	75	3,4

Go back to [D.1.2.1. Candidates registered for the entrance exam](#)



D.5.1.2.2. INCOMING STUDENTS

Geographic origin, type of high school certificate, age and gender of students.

Data shows a homogeneous group of students ("cohort") which started together their academic career. Students which have passed to an other Study Programme, transferred from an other university, or registered to a 2nd degree are not included.

The tables show the number, geographic origin, gender, age, type and grade of high school certificate of students enrolling in the degree programme.

Data of the Study Programme is compared with the average of the Study Programmes of average of similar Study Programmes (which belong to the same group) for the indicated academic years.

Data of the Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170)

		Registered students	Geographic origin					Gender		Average age of registered students		
			Students coming from the province of the Study Programme site	Students coming from other provinces where Unibo has a site	Students coming from other provinces of Emilia Romagna region	Students coming from other Italian regions	Students coming from abroad	M	F	19 or less	20 - 24	25 or more
Students 2010/2011	Study Programme	9	33,3%	55,6%		11,1%		11,1%	88,9%	88,9%	11,1%	
	Average of similar Study Programmes	48,9	37,0%	25,5%	7,9%	27,5%	2,1%	44,1%	55,9%	62,3%	28,7%	9,1%

		High school certificate					Grade of High school			
		Vocational schools	Technical Colleges	High school specializing in education and in psycho-pedagogical science	High schools specializing in classical studies, modern languages, science education	Other Italian or foreign high schools	Grade ranging from 60 to 69	Grade ranging from 70 to 79	Grade ranging from 80 to 89	Grade ranging from 90 to 100
Students 2010/2011	Study Programme		11,1%		88,9%		11,1%	33,3%	22,2%	33,3%
	Average of similar Study Programmes	9,7%	27,6%	4,5%	49,6%	8,6%	28,2%	33,3%	21,6%	14,8%

Go back to D.1.2.2. Incoming students

## D.5.2. REGULARITY OF STUDIES

*Insight into the regularity with which the students pass their exams.*

*Graphs and tables provide information on the number of students who leave the programme after the first year and the number of regular graduates, focusing on the number of credits obtained at the end of the first year, the number of exams passed and the average grade achieved for each course unit.*

### D.5.2.1. STUDENTS LEAVING THE PROGRAMME BETWEEN YEARS 1 AND 2

Here the number of students leaving the Study Programme is shown.

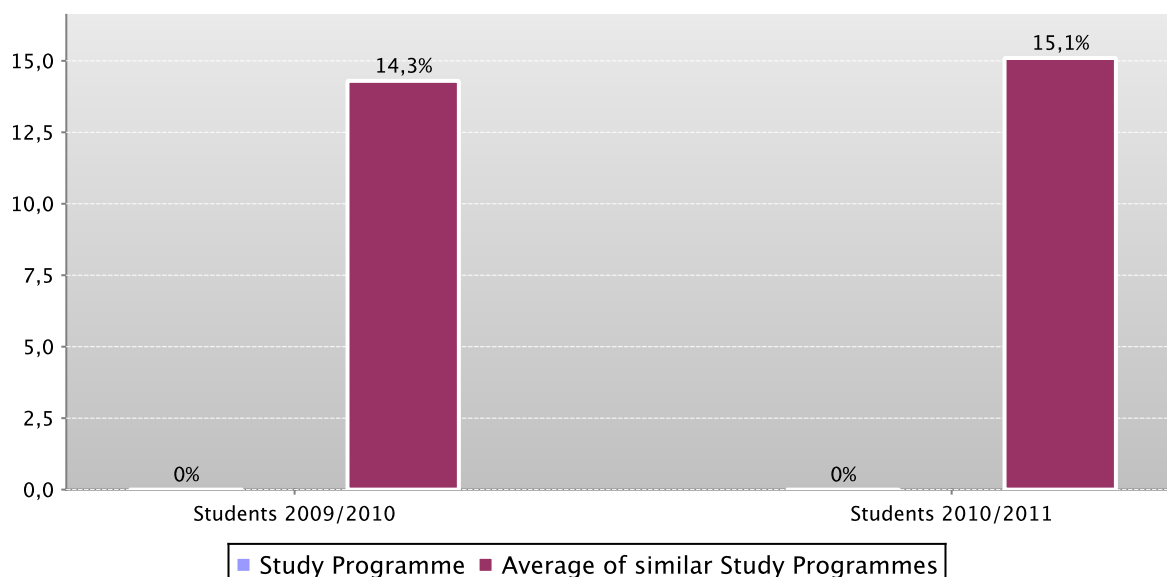
The **graph** shows the percentage of students who leave the programme after the first year compared to the average of similar Study Programmes (belonging to the same group)

The **table** shows the registered students, the percentage of students leaving the programme who pass to a different Study Programme in the same Faculty or another Faculty of the same university, transfer to another university or withdraw from studies, as well as the enrolled repeating students and those enrolled in the second year.

The Study Programme data is compared with the average of similar Study Programmes of (which belong to the same group), for students registered in the indicated academic years.

Percentage of withdrawals between years 1 and 2

*Data of the Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170)*



*Data of the Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170)*

		Registered students	% withdrawals	% passages and transfers	% repeating students	Students enrolled in the second year
Students 2009/2010	Study Programme	8	0,0%	25,0%	0,0%	6
	Average of similar Study Programmes	46,1	14,3%	6,8%	0,3%	36,3
Students 2010/2011	Study Programme	9	0,0%	0,0%	0,0%	9
	Average of similar Study Programmes	48,9	15,1%	9,4%	0,4%	36,8

\*Note: From academic year 2009/2010 repeating students are deemed to be those who have not fulfilled the assigned OFA, therefore the data provided for a.y. 2009/2010 and followings cannot be compared to the previous years.

Go back to D.2.1. Students leaving the Study Programme between years 1 and 2

### D.5.2.2. REGULAR GRADUATES

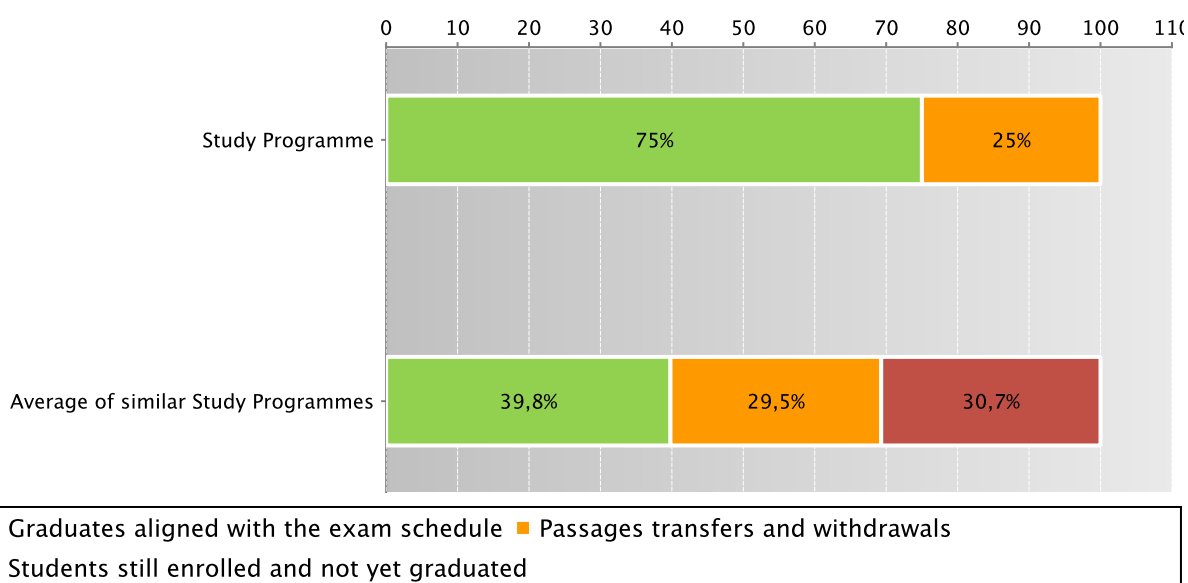
Here you will find information on regular graduates, on how many students, at the end of the regular programme duration, left the programme and how many are still enrolled but not aligned to the exam schedule.

The **graph** and the **table** show the situation concerning **registered students** for the indicated academic year, at the end of the regular duration of the Study Programme, highlighting the percentage of regular graduates, the number of students still enrolled (**not aligned to the exam schedule** and **repeating** students), students who have left the programme (including **passages**, **transfers** and **withdrawals**).

The Study Programme data is compared with the average of similar Study Programmes (which belong to the same group) for students registered in the indicated academic years.

Situation of students 2009/2010 at the end of regular duration of the study programme

Data of the Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170)



Data of the Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170)

	Registered students	Regular graduates		Passages transfers and withdrawals		Students still enrolled and not yet graduated		
		N.	%	N.	%	N.	%	
Students 2007/2008	Study Programme	13	8	61,5%	4	30,8%	1	7,7%
	Average of similar Study Programmes	38,5	12,2	31,6%	13,1	34,1%	13,2	34,2%
Students 2008/2009	Study Programme	8	6	75,0%	1	12,5%	1	12,5%
	Average of similar Study Programmes	42,7	16,4	38,4%	12,8	30,1%	13,4	31,4%
Students 2009/2010	Study Programme	8	6	75,0%	2	25,0%	0	0,0%
	Average of similar Study Programmes	46,1	18,3	39,8%	13,6	29,5%	14,2	30,7%

[Go back to D.2.2. Regular graduates](#)

### D.5.2.3. ADDITIONAL DATA ON REGULARITY OF STUDIES

#### D.5.2.3.1. CREDITS OBTAINED BY STUDENTS IN THE 1ST YEAR

This offers an insight into how regularly students pass their exams.

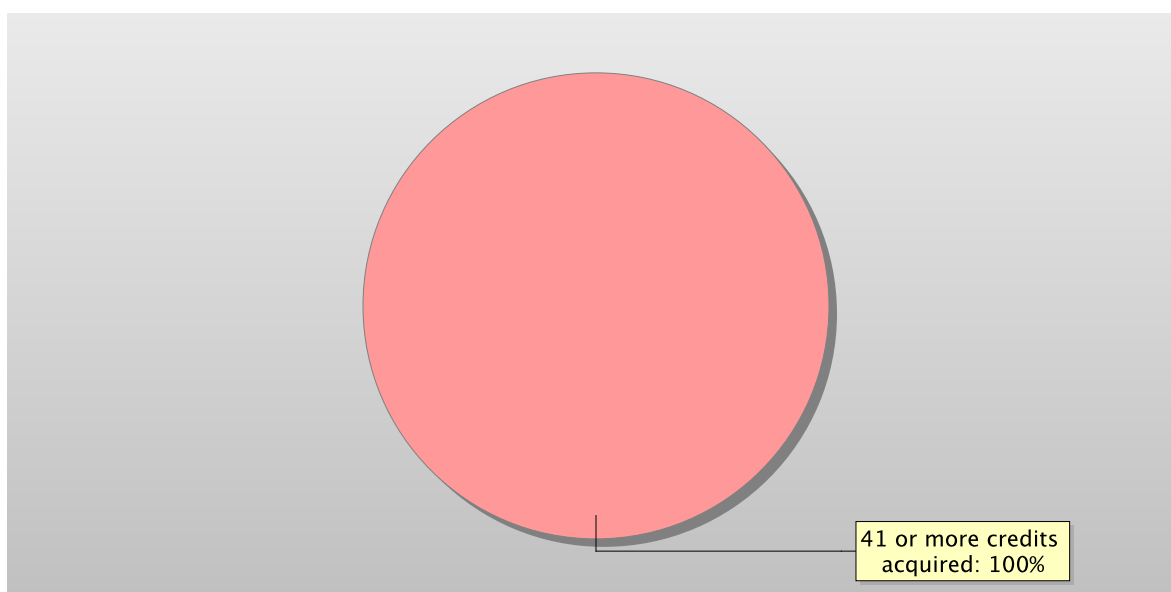
The **graph** shows the distribution of the students according to the number of **credits** obtained at the end of the first year.

In addition, the **table** shows the number of students registered at the second year and average **credits** obtained during the first year.

The Study Programme data is compared with the average of **similar Study Programmes (which belong to the same group)** for the indicated academic years.

Distribution of the students in 2010/2011 according to the number of credits obtained at the end of the first year\*

Data of the Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170)



Data of the Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170)

		Students enrolled in the 2nd year	% students with *				Average credits per student
			0 credits acquired	from 1 to 20 credits acquired	from 21 to 40 credits acquired	41 or more credits acquired	
Students 2009/2010	Study Programme	6			33,3%	66,7%	44,7
	Average of similar Study Programmes	36,3	3,4%	18,7%	40,7%	37,2%	33,4
Students 2010/2011	Study Programme	9				100,0%	55,9
	Average of similar Study Programmes	36,8	2,3%	17,5%	40,2%	40,0%	34,8

\*Note: by convention, credits are considered to be obtained by students by 31st October of the year following the year of enrolment.

[Go back to D.2.3.1. Credits obtained by students in the 1st year](#)

**D.5.2.3.2. EXAMS PASSED AND AVERAGE GRADE**

The **table** shows number of exams passed and average grade achieved for each course unit in the calendar year 2011. Marks for the exams passed are expressed out of thirty.

The data refers to the course unit code and therefore includes the various branches of the programme divided into channels or sub-groups, divided by letter.

It considers all subjects for which a grade is assigned, and therefore excludes all those to which a pass/fail score is allocated.

*Data of the Study Programme D.M. 509/99 Tecniche di laboratorio biomedico (abilitante alla professione sanitaria di tecnico di laboratorio biomedico) (code 0170)*

	N. of exams passed	Average grade *
02207 PSICOLOGIA GENERALE	7	22,7
05181 FISIOLOGIA	5	
12931 ISTOLOGIA E ANATOMIA UMANA (CORSO INTEGRATO)	5	
21005 BIOCHIMICA (C.I.)	2	
21107 MICROBIOLOGIA E MICROBIOLOGIA CLINICA (C.I.)	17	28,2
21117 FISICA, STATISTICA ED INFORMATICA (C.I.)	4	
21197 BIOLOGIA E GENETICA (C.I.)	2	
21202 IGIENE, MEDICINA LEGALE, NORME DI SICUREZZA (C.I.)	2	
21364 PATOLOGIA E FISIOPATOLOGIA GENERALE (C.I.)	17	27,8
21367 FISIOPATOLOGIA SPECIALE II (C.I.)	20	27,4
21368 BIOCHIMICA CLINICA (C.I.)	17	24,9
21369 PATOLOGIA CLINICA (C.I.)	19	27,4
21370 ISTOPATOLOGIA (C.I.)	19	28,3
21371 TECNICHE DIAGNOSTICHE DI BIOCHIMICA CLINICA (C.I.)	19	29,9
21376 TECNICHE DIAGNOSTICHE DI PATOLOGIA CLINICA (C.I.)	15	27,9
21379 TECNICHE DIAGNOSTICHE DI MICROBIOLOGIA CLINICA (C.I.)	16	27,2
21382 TECNICHE DIAGNOSTICHE DI ISTOPATOLOGIA (C.I.)	16	29,3
21385 FARMACOLOGIA E METODICHE FARMACOLOGICHE (C.I.)	15	24,7
42394 TIROCINIO 2	14	29,6
42395 TIROCINIO 3	14	29,4
44791 TECNICHE DI BIOLOGIA MOLECOLARE IN IMMUNOEMATOLOGIA	5	
49540 LA MEDICINA TRASFUSIONALE E LE BANCHE DEI TESSUTI	10	29,7
58581 FISIOPATOLOGIA SPECIALE - I (C.I.)	18	27,3
58582 ORGANIZZAZIONE DI LABORATORIO - CORSO INTEGRATO	14	29,8

\* No average grade is given if the number of exams passed is less than or equal to 5.

Go back to [D.2.3.2. Exams passed and average grade](#)

### D.5.3. OPINIONS OF ATTENDING STUDENTS AND GRADUATES

*Opinions of graduates on the Study Programme.*

*Tables and graphs provide information on the number of graduates who expressed positive opinions on the Study Programme, focusing on opinions expressed by attending students on course units.*

#### D.5.3.1. OPINION OF GRADUATES

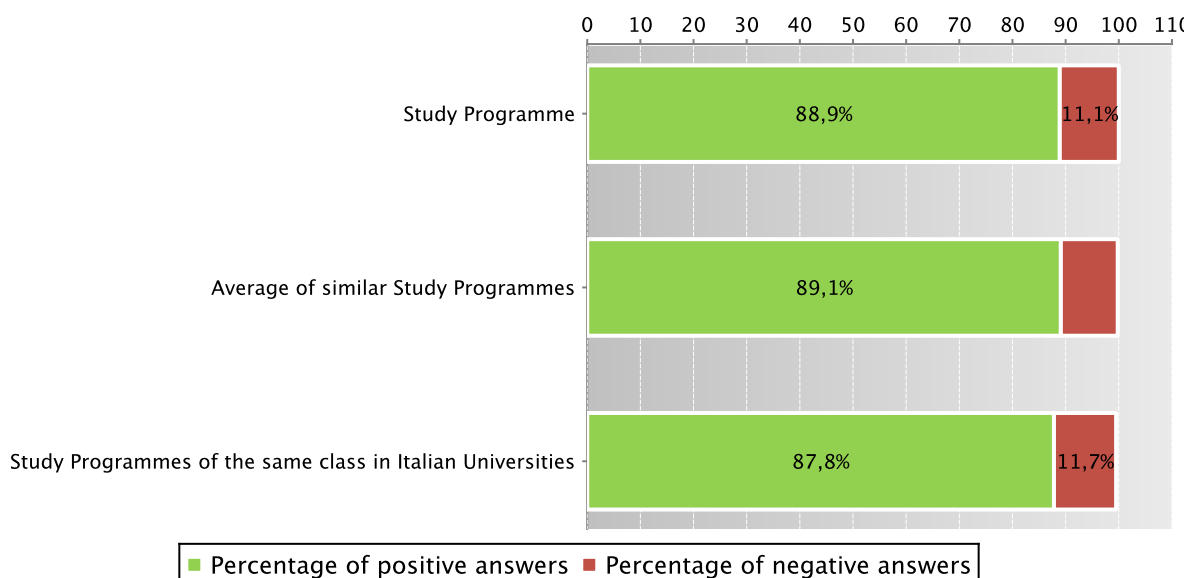
The **graph** shows the percentage of graduates (AlmaLaurea survey) who responded positively to the question: “**Are you generally satisfied with the Study Programme**”.

In addition, the **table** shows the percentage of students who answered “Yes, to the same programme at the university” to the question “Would you register again to the university?”.

The Study Programme data is compared with the average of similar Study Programmes (which belong to the same group), for the indicated years.

Graduates in 2012 who responded positively to the question: “Are you generally satisfied with this Study Programme?”

*Data of the Study Programme D.M. 509/99 Tecniche di laboratorio biomedico (abilitante alla professione sanitaria di tecnico di laboratorio biomedico) (code 0170)*



Data of the Study Programme D.M. 509/99 Tecniche di laboratorio biomedico (abilitante alla professione sanitaria di tecnico di laboratorio biomedico) (code 0170)

		N. graduates	Completed Questionnaires	% of positive answers to the question: "Are you generally satisfied with this Study Programme?"	% of answers "yes to the same Programme in the same University" to the question "Would you register again to the University"
2010	Study Programme	26	25	92,0%	80,0%
	Average of similar Study Programmes	31,7	29,2	89,0%	72,8%
	Study Programmes of the same class in Italian Universities	2212	1968	89,3%	70,4%
2011	Study Programme	18	16	81,3%	68,8%
	Average of similar Study Programmes	21,2	19,8	89,2%	72,1%
	Study Programmes of the same class in Italian Universities	2460	2266	88,0%	67,7%
2012	Study Programme	20	18	88,9%	72,2%
	Average of similar Study Programmes	25,4	24,3	89,1%	73,0%
	Study Programmes of the same class in Italian Universities	2610	2368	87,8%	66,8%

Symbols:

(\*) The opinions of the Study Programmes with less than 5 graduates are not shown.

Further information on [Graduates' Profile Report](#).

Go back to [D.3.1. Opinion of graduates](#)

## D.5.3.2 ADDITIONAL DATA ON OPINIONS OF STUDENTS

### D.5.3.2.1. OPINION OF ATTENDING STUDENTS

Data of opinion of attending students of the last three academic years are shown in paragraph [D.3.2.1](#).

## D.5.4. ENTRY INTO THE WORLD OF WORK

*Employment situation of graduates of the Study Programme.*

*Tables and graphs provide information on the employment situation of graduates one year after graduating.*

### D.5.4.1. EMPLOYMENT SITUATION

The paragraph shows the employment situation of graduates one year after graduating.

The data is taken from the [AlmaLaurea](#) reports on the employment situation of graduates.

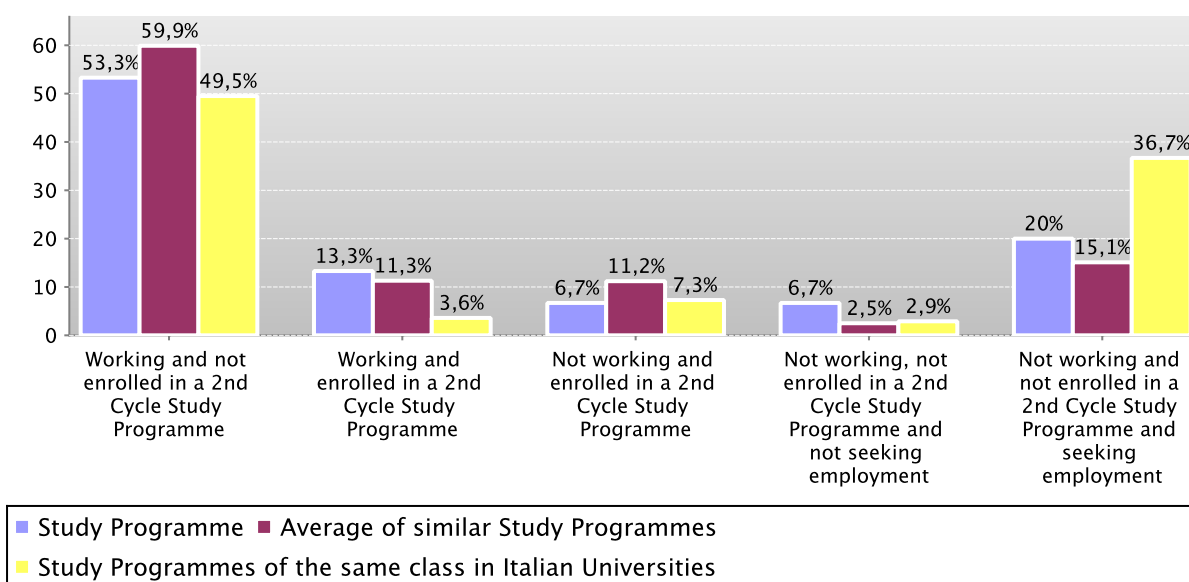
The **graph** shows who is working, who is not working but has enrolled in a Second Cycle study programme, who is not working and is not seeking employment, who is not working but is seeking employment.

In addition, the **table** shows the number of graduates interviewed, the number involved in internships and traineeships and the appropriateness of their degree to the job.

The Study Programme data is compared with the average of **similar Study Programmes (which belong to the same group)** and the average of Study Programmes of the same faculty of other Italian universities for the graduates of the indicated years.

Employment situation of graduates in 2011 one year after graduating

*Data of the Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170)*





Data of the Study Programme D.M. 509/99 Techniques in the Biomedical Laboratory (for certified professional technicians in the biomedical laboratory) (code 0170)

		N. graduates interviewed	Employment and education situation (1)					Not working, not seeking employment, but following a university programme/traineeship (2)	Degree's appropriateness for the job (referred to the graduates who just work) (3)	
			Working and not enrolled in a 2nd Cycle Study Programme	Working and enrolled in a 2nd Cycle Study Programme	Not working and enrolled in a 2nd Cycle Study Programme	Not working, not enrolled in a 2nd Cycle Study Programme and not seeking employment	Not working and not enrolled in a 2nd Cycle Study Programme and seeking employment		Effective / very effective	Quite effective
Graduation Year 2009	Study Programme	5	60,0%				40,0%		33,3%	33,3%
	Average of similar Study Programmes	26	66,8%	8,5%	13,7%	2,8%	8,2%	11,1%	77,6%	10,2%
	Study Programmes of the same class in Italian Universities	2136	66,8%	3,5%	4,6%	3,7%	21,3%	2,1%	82,4%	6,2%
Graduation Year 2010	Study Programme	26	42,3%		3,8%	11,5%	42,3%	3,8%	63,6%	9,1%
	Average of similar Study Programmes	26,6	63,4%	8,9%	13,5%	3,3%	10,8%	12,2%	74,7%	10,6%
	Study Programmes of the same class in Italian Universities	1938	55,2%	3,2%	6,6%	3,3%	31,8%	3,0%	80,9%	4,0%
Graduation Year 2011	Study Programme	15	53,3%	13,3%	6,7%	6,7%	20,0%		30,0%	10,0%
	Average of similar Study Programmes	18,9	59,9%	11,3%	11,2%	2,5%	15,1%	9,9%	73,3%	11,7%
	Study Programmes of the same class in Italian Universities	2237	49,5%	3,6%	7,3%	2,9%	36,7%	3,5%	73,4%	6,0%

Symbols:

(\*) The opinions of the Study Programmes with less than 5 graduates are not shown.

### Notes on the AlmaLaurea report on the employment situation of graduates

**(1)** "Employment and education situation": the number of employed graduates is the sum of those working and those working who are also enrolled in a 2nd cycle degree programme. The number of those enrolled in a 2nd cycle degree programme is the sum of those who are working and studying and those who are only studying.

**(2)** "Number of those who do not work, who are not seeking employment but who are following a university programme/traineeship": the definition includes those who are enrolled in traineeships, PhD degrees, specialisation schools, Italian "master universitari"(first and second level). The presentation of this data complies with article 2 of D.M. 544 of 31st October 2007, as later provided for in Management Decree no. 61 of 10th June 2008 (transparency requirements).

**(3)** The evaluation of the appropriateness of the degree is obtained by a combination of the requirement of the relative qualification for the job held and the level of usage of the skills learned at university.

Further information on [Graduates' Employment report](#).

Go back to [D.4.1. Employment situation](#)

## E. FIND OUT MORE: THE QUALITY OF YOUR STUDY PROGRAMME

The University of Bologna has identified its objectives as the *personal, cultural and professional growth of students and the improvement of the quality of learning, also in relation to the needs of society* (Strategic Plan 2010-2013).

Students, employers and society as a whole, have the right to effective learning for individual and intellectual growth, to develop critical sense and to prepare for the world of work.

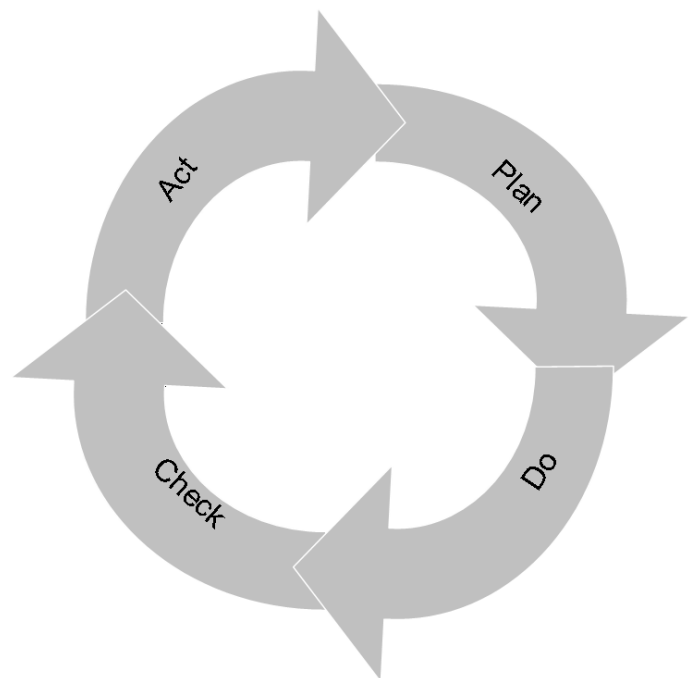
In the Statute and the Strategic Plan 2010-2013 the University of Bologna acknowledges its responsibility in guaranteeing the quality of its study programmes, and for this purpose adopts an "internal quality assurance system".

### The Internal Quality Assurance system

The internal quality assurance system is a set of processes and responsibilities adopted to guarantee the quality of Study Programmes at the University of Bologna.

The guarantee of the quality of a Study Programme is the correspondence of the results achieved with the set objectives, in the following phases:

- Plan: defining the objectives
- Do: implementing the planned actions
- Check: checking that the objectives have been achieved
- Act: planning improvement action



This path responds to the expectations of students, guides teaching behaviour and provides indicators for the assessment of results. Self-assessment is based on the analysis of significant data (for example, the number of students graduating in line with the exam schedule, students' opinions and the employment rates of graduates) and highlights strengths and weaknesses in order to reflect on the achieved results, critically consider one's own working methods and take steps for the continual improvement of the Programme. This path involves all educational stakeholders, including students, in order to make use of the contributions of everyone with first-hand knowledge of the Study Programme. Improvement is therefore a day to day development, concerning all aspects of teaching: from the lesson timetable to the publication of on-line programmes, from classroom management to exam methods, and the actual design of the Programme.

This is what happens in each phase:

- **Planning:** the Study Programme is the result of a proposal from the teaching structures and approved by the Academic Bodies.
- **Management:** Schools, Departments and Study Programmes manage the activities required to ensure teaching. The activities are organised as follows:

What we do	Who does what				
	Professors	Study Programme	Schools	Departments	General Administration
Teaching calendar, lessons programme and exam schedules			x		
Management of financial resources			x	x	
Classroom teaching	x				
Management of classrooms and laboratories			x	x	
Libraries and study rooms			x	x	
Approval of individual study plans		x			
Communication and information		x	x		Academic Affairs Division
Guidance service		x	x		Academic Affairs Division
Internships		x	x		Academic Affairs Division
Administrative services: Student Administration Office					Academic Affairs Division
Administration services: Degree programme office			x		Academic Affairs Division
Study grants and loans ad honorem					Academic Affairs Division
Student mobility: university subsidies and programmes					International Relations Division
Mobility: study grants for dissertations abroad			x		
Mobility: authorisations and recognitions		x			
Other students support services		x	x		x

- Internal assessment:** every Study Programme periodically assesses its own results, evaluating, for example, the number of enrolled students, the number of withdrawing students, student opinions etc.; in this way, the strengths and weaknesses, as well as any implemented improvement actions, are highlighted. This phase is organised as follows:

What we do	Who does what
<p><b>Definition, gathering and publication of evaluation data</b> According to the general guidelines of the University and national and international standards, are defined the tools through which should be evaluated the results (indicators). The survey data to be evaluate are published every year on the Report of the Study Program.</p>	Academic Bodies
<p><b>Self-Assessment</b> The Schools and Study Programmes assess the effectiveness of the previously adopted solutions, analyse the progress of their learning activities and draw up proposals for improvement.</p>	Schools and Study Programmes
<p><b>Internal audit</b></p> <p>The results of the self-assessment process are reviewed in the following phases:</p> <ul style="list-style-type: none"> <li>• <b>Analysis:</b> the University Quality Manager analyses the review documents, considering the ability to identify problems, propose solutions and the overall development of the internal quality assurance system.</li> <li>• <b>Review:</b> The observations on the results obtained and the good practices adopted are examined together with the persons in charge of the Schools and Study Programmes in meetings organised by scientific-disciplinary field. The persons in charge receive the observations and inputs on the areas for development and the actions to be adopted in future to improve results.</li> <li>• <b>Sharing:</b> the conclusions of the review activities are submitted to the Academic Bodies and the University Evaluation Board.</li> </ul>	<p>Quality Manager</p> <p>Vice Rector for Teaching and Education</p> <p>Academic Bodies</p>
<ul style="list-style-type: none"> <li>• <b>Improvement:</b> on the basis of the results of the internal audit, the Schools and Study Programmes plan improvement activities, to ensure that the Study Programmes increasingly respond to the needs of society. The cycle then starts over again, with the definition of actions to be implemented, the results of which are in turn verified, in a continuous path that guarantees the quality of education.</li> </ul>	

## F. GLOSSARY TERMS

### Additional Learning Requirements

Students enrolling in the first year of a first cycle or single cycle degree and who, following the results of the entrance exams established for each study programme, do not possess the knowledge required for access to the programme, are assigned additional learning requirements (OFA).

The OFA are fulfilled by passing an assessment test defined by the programme.

The non-fulfilment of the requirements by the date set by the Academic Bodies and published on the University Portal will lead to the re-enrolment in the first year of the programme.

### AlmaLaurea

AlmaLaurea is an innovative in-line database service of graduates' curriculum vitae (1,620,000 CVs, from 53 Italian universities as of 05/07/2012), which offers a link between graduates, universities and businesses.

Created in 1994 on the initiative of the Statistical Observatory of the University of Bologna, managed by a consortium of Italian universities with the support of the Ministry of Education, University and Research, the purpose AlmaLaurea is to act as a point of contact between businesses and graduates, a reference within universities for anyone (students, businesses, etc...) working in the field of university studies, employment and the condition of young people at different levels.

### Average of similar study programmes (belonging to the same group)

Average of the Study Programmes (which belong to the subject group)

Calculated average which refers to all study programmes of the same cycle which belong to the subject group.

There are four groups, composed as follows:

- **BIOMEDICAL** group: Study Programmes of the Schools of Pharmacy, Biotechnology and Sport Science; Medicine; Agriculture and Veterinary Medicine
- **SCIENTIFIC-TECHNOLOGICAL** group: Study Programmes of the Schools of Engineering and Architecture; Sciences
- **SOCIAL SCIENCES** group: Study Programmes of the Schools of Economics, Management, and Statistics; Law, Political Sciences
- **HUMANITIES** group: Study Programmes of the Schools of Arts, Humanities, and Cultural Heritage; Foreign Languages and Literatures, Interpreting and Translation; Psychology and Education

### CFU University Learning Credits

University Learning Credits (CFU) were introduced under Italian Ministerial Decree no. 509/99 to comply with European legislation, and are a measurement of the volume of learning, including individual study, required of students; generally 1 CFU corresponds to 25 hours of a student's "overall learning effort".

### Class

Degree classes group together study programmes of the same level and with the same key learning outcomes and available learning activities for a given number of credits and in sectors which are identified as indispensable. The features of the classes are set nationally, by Ministerial Decree, and are therefore common to all universities.

### Cohort

Cohort refers to a group of students enrolled in the same academic year.

### Enrolment status

In terms of enrolment, students may be:

- **Regularly enrolled:** students enrolled for as many or fewer years than the legal duration of the study programme, who do not fall into any of the following categories;
- **Not aligned with the exam schedule:** students who, without having graduated, have enrolled in all the years of the study programme and which, for programmes with compulsory attendance, have obtained all attendance certificates;
- **Repeating:** students re-enrolling in the same year of a programme again. Starting from academic year 2009-2010, students who have not fulfilled the assigned additional learning requirements within the deadline have to enrol in the 1st year as repeating students.

### Entrance exam

Enrolment in a study programme may be free access or restricted access.

For all programmes with restricted access, candidates are required to sit an entrance exam and there are a limited number of places available. The entrance exam is a test which is used to draw up a graded list of candidates; students may enrol in the programme according to their place in the list. The methods of managing the call for applications and the list of candidates, including the methods for filling any unclaimed places, may vary from year to year. The test may be specific to a Degree Programme or may be part of a single exam covering several programmes from the same university or from other universities (during the registration the students should indicate their first choice).

The following definitions apply:

**Available places** = the number of places laid down in the call for applications to the Study Programme, or determined by subsequent legal provisions; these exclude any additional places reserved according to special provisions of the programme (e.g. for international study programmes, they do not include places for foreign students selected from other universities; for all programmes with restricted access regulated nationally, these do not include the places reserved for transferring students).

**Number of candidates for the exam** = number of students registered for the exam indicating the study programme as their first choice;

**Number of participants in the exam** = number of students participating in the exam indicating the study programme as their first choice;

**Number of participants in the exam for every available place** = number of students participating in the exam who indicated the study programme as their first choice as a ratio of the number of places available on the programme.

#### First year enrolments

This includes all students enrolled in the first year, including those joining the study programme in its first year through transferrals, as well as those enrolled in the first year but not for the first time (e.g. repeating students).

#### New Careers

Students who start a new university career (excluding transfers) from year one in a second cycle programme.

#### Passages and transfers

**Passage:** when a student applies to move to a different study programme from the one enrolled in the previous year, within the same university.

**Transfer:** when a student transfers from a study programme in one university to any programme in another university.

#### Registered students

Students who begin a career in the Italian University System for the first time and who enrol in the first year (i.e. for whom no previous university careers are recorded) of a First Cycle (L509, L) or Single Cycle programme (LSCU, LMCU)

#### Statistical Observatory of the University of Bologna

The Statistical Observatory was founded in 1997 in order to “provide the university governing bodies with a reliable and timely documentary and monitoring database aiming to promote decision-making processes and planning, particularly of learning activities and other services targeting the student population” (art.1 of the Founding and Operational Regulation). Following the disabling of the Statistical Observatory, as resolved by the Board of Governors on 14 December 2010, from the second semester of academic year 2010-11 the survey and subsequently analysis of the attending students opinion is cared for the University of Bologna by Academic Affairs Division - Quality Assurance Department and Control and Finance Division - Support Planning and Evaluation Department. The overall results and the methods of collection and analysis are described in the document published online on the [Statistical Observatory of the University of Bologna](#).

#### University DataWarehouse

Information service for the managers of the University of Bologna organisational departments which gathers, integrates and reorganises data from various sources and makes it available for analysis and evaluation for the purposes of planning and decision-making.

#### Withdrawal

Suspension of studies by students who do not register in the next academic year, or who drop out from the degree programme.