2013

REPORT

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

School of Engineering and Architecture
Laurea (First cycle degree/ Bachelor - 180 ECTS) in Automation Engineering A.Y. 2013/2014
Programme Director Prof. Claudio Melchiorri

INDICE

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 specific learning objectives of the degree programme in Automation Engineering are to form professionals with a solid background who are qualified to fill technical roles in management and design in firms where skills are required in the areas of sizing and building architectural structures of medium to high complexity, automatic and robotic systems, processes and plants for automation that integrate computer components, measuring, transmission and execution apparatus. Thus the Automation Engineer, in contrast to other types of Computer Engineers, must have good cross-disciplinary knowledge in the areas of automation, mechanics, computer science, electronics and electrotechnics.

Graduates, therefore, firstly will have sound knowledge of the methodological and operative aspects of basic sciences and Engineering, focusing especially on the aspects related to automation, but without neglecting more general aspects; they then study in-depth the more specific knowledge of the methods and tools that are fundamental for component design, automation processes and systems using a multi-disciplinary approach.

Graduate preparation is integrated and completed by important laboratory work, aspects of contemporary business training and adequate knowledge of a foreign language.

Graduates in Automation Engineering will have post-secondary school knowledge and understanding ability in the fields of automation, mechanics, computer science, electronics and electrotechnics and will have a level of education characterised by the study of advanced specialist text books, that require knowledge of avant-garde topics such as the use and design of highly-dynamic automatic machines, robotics, the automation sector and control and performance systems based on modern and innovative technologies.

A.2. ADMISSION REQUIREMENTS

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

This information is not available in English at this time.

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 ABILITY:
Graduates:
- will have knowledge of the methodological-operative aspects of mathematical studies, basic sciences, industrial technologies and information technology and will be able to use this knowledge to interpret and describe problems of medium complexity that are typical of automation engineering;
- will have knowledge of the fundamental themes related to the subject areas of Mechanics, Automation, Electronics and Electrotechnics and Computer Science, and skills in the evaluation of cost/benefit ratios deriving from integration of components, innovative apparatus and systems in the context of automatic applications;
- will be able to understand the fundamental themes of Economics as regards their application to the solution of problems of economic optimum and in comparison with alternatives in problems related to engineering;
- will have the knowledge and understanding required to keep up to date as regards methods, techniques and tools in the field of automation engineering, as well as to continue further studies at a higher level with considerable independence.

The knowledge and understanding abilities listed above are developed through the course units organised in the areas of "Mathematics, Computer Science and Statistics", "Physics and Chemistry", "Electronic Engineering", "Automation Engineering", and "Computer Engineering". The teaching methods used include participation in lectures, practical activities and seminars, supervised and individual home study. Assessment is accomplished mainly by means of tests, written and oral examinations to which a mark is given, and examinations and laboratories with a pass/fail mark.

ABILITY TO APPLY KNOWLEDGE AND TO UNDERSTAND:
Graduates:
- will use knowledge and ability for a professional approach to work and will have the skills necessary to resolve specific problems in the area of automation;
- will have knowledge of the organisation of production systems as regards their technological component (mechanical, electronic, informatic and of control), will have the ability to analyse them in a systematic way;

- will have fundamental knowledge of the systematic techniques for the definition of models of dynamic systems and the computer tools for their simulation;
- will have fundamental knowledge of the methodologies for the design and construction of control systems for dynamic systems;
- will have knowledge of basic integrated design of automatic machines and production systems;
- will be able to choose and size robotic systems for automatic production (sensors, performance systems, management and control);
- will be able to conduct experiments, tests and quality control of medium complexity and interpret the resulting data;
- will have developed knowledge and specific skills for the identification and use of appropriate tools for the analysis and design of problems and contexts of medium to high technology;
- will be able to critically use appropriate methodologies for determining the performance of technological systems that support the main management processes.

The achievement of the ability to apply knowledge and to understand as set out above is developed through the critical study of set texts for home study, research and application case studies demonstrated by teaching staff, as well as numerical exercises and practical laboratory or computer activities, bibliographical and field research, as well as project work, especially those provided for in the core curriculum course units, and in the preparationof the final paper. Assessment is accomplished by means of specific tasks (written and oral exams, reports, practical activities, problem-solving) in which students demonstrate command over tools, methodologies and judgement skills.

JUDGEMENT SKILLS:

Graduates:

- will be able to identify, formulate and resolve problems linked to the management and design of apparatus, machines and automatic systems for production processes;
- will be able to test, experiment and evaluate the performance of hardware/software infrastructures of automatic systems, and establish their degree of conformity to the specific project requirements, interpreting the results obtained;
- will be able to gather, integrate and interpret data and information to use for forming opinions on their importance and the technical implications in the management and design of industrial automation systems;
- will be able to keep up to date on methods, techniques and tools in the area of automation engineering making reference to specialist literature;
- will be able to understand articles published in the technical and scientific literature and formulate an independent opinion on their importance and implications;
- will be able to find and consult the main bibliographical and web sources on proposals for standardisations at a national and international level and legislation regarding certification of products and systems of industrial interest.

Judgement skills are developed particularly during practical activities, seminars, and the preparation of written assignments and during the work assigned by the supervising professor in preparation of the final paper. Assessment is accomplished through evaluation of students' maturity demonstrated in examinations and during the work in preparation of the final paper.

COMMUNICATION SKILLS:

Graduates:

- will be able to communicate data, information, problems and solutions effectively, both orally and in writing, not only in Italian but also in English (level B1) to a specialist and non-specialist audience;
- will be able to draft technical reports related to projects carried out, interpret technical reports written by colleagues, both above and below themselves, and potentially read and/or draft company regulations and technical manuals;
- will be able to work well with technicians and professionals that have skills that may differ from their own, in particular in the area of Computer and Industrial engineering;
- will be able to work well within a team as engineer, working along with or coordinating the work of other technical staff.

These written and oral communication skills are developed particularly during seminars, practical activities and in general, during the course units that require the preparation of reports and written assignments and their subsequent oral presentation. The communication skills listed above are also developed during the preparation of the final paper. The English test completes the development of these communication skills.

LEARNING SKILLS:

Graduates:

- will be able to acquire new skills in the area of Mechanics, Automatics, Electronics and Electrotechnics as required when working in the field of automation, as well as being able to learn skills of a certain complexity related to basic methodologies of engineering ;
- will be able to keep up to date on methods, techniques and tools oriented to requirement analysis, modeling and design, testing and correction and optimisation of the performance of automatic systems and applications
- will be able to undertake further studies in the areas of Information and Industrial Engineering with considerable independence.

The learning skills listed above are developed in the course units of all the subject areas in the degree programme, especially those that are partly completed independently. The specific teaching methods used include tutorials. Assessment of learning skills forms part of all the exams of the degree programme.

A.4. CAREER OPPORTUNITIES

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

AUTOMATION ENGINEER
Main functions performed:
The AUTOMATION ENGINEER will have interdisciplinary skills in the areas of automatics, mechanics, computer science, electronics and electrotechnics and will be able to conceive, design, create and work automation systems for machines, processes, plants, products and services.
The degree programme qualifies the following professionals:
- engineers with interdisciplinary skills for collaboration in the conception, design, creation and working of mechanical automation systems for machines, processes and plants;
- engineers who are able to work in the design, management and creation of the real-time acquisition, processing and control systems that are typical of the computer-based automation systems;
- engineers who are able to work in centres and laboratories for research and development in the area of automation and who can conduct experiments and work together with others on technologically-innovative research.
Automation engineers have specific skills that enable them to adapt easily to new many different work environments, working as a systems specialist and/or designer and/or technician in any context of application where the technologies and principles of automation are important.
Career opportunities:
The main career opportunities include the areas of manufacturing, industrial transformation, both traditional (transport, distribution and regional management, etc.) and advanced (corporate consultancy, automatic machines, informatics, etc.) service industries with high-added value and in Local Government. In these areas, graduates from Automation Engineering have the opportunity to contribute, thanks to their specific skills, to technological and production innovation processes which may also require knowledge of computer and industrial technologies. Specifically, graduates may find work in firms that produce or use components and systems of automation, engineering companies, public and private firms that use automatic/mechanical/computer techniques and technologies to optimize their production, management and/or to provide services. The typical work opportunities for graduates from Automation in Engineering are therefore:
· in firms that produce and/or use components and systems for automation;
· firms that operate in the sector of industrial automation, robotics, the car industry, design and production of machines and plants for working wood and packaging and preserving food products and pharmaceuticals;
· processing industries of the mechanical, electrical, electromechanical, energy and chemical sectors;
· industries for software development for aiding mechanical design, control and simulation, computer-assisted industrial design and reverse engineering, and virtual simulation generally;
· industrial laboratories;
· training centres and schools;
· research institutes.

In particular, for graduates in Automation Engineering in the Emilia-Romagna Region there are many opportunities for work in the area of industrial automation. There are many leading industries in the region in the sectors, for example, of production of machines for packaging which have earned the region the title of "Packaging Valley" and which are now renowned world-wide.
In addition to this specific sector, the whole of the Emilia-Romagna region, but particularly the area around Bologna, has an advanced industrial system that works at an international level, with a high concentration of small and medium-sized firms that work in different industrial areas, from mechanics to electronics, the car industry to robotics, the ceramics industry to the agricultural and food industries. The regional economic system is, moreover, characterised by an organisation of both traditional and advanced services that is highly developed, both in the private and local government sector.
The professional qualifications of the Automation Engineer, thanks to their versatility and the specific ability to develop technological skills in different areas and sectors, are especially suited to the requirements of such a diversified economic context.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 (Master's degrees) and to professional master's programmes.

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:

Baldi, Annalisa	Diversi, Roberto	Melchiorri, Claudio	Tilli, Andrea
Bonivento, Claudio	Fabbri, Massimo	Milano, Michela	Vannini, Gianni
Brini, Francesca	Filicori, Fabio	Rossi, Carlo	Zanarini, Alessandro
Casadei, Domenico	Filippetti, Fiorenzo	Salmon Cinotti, Tullio	Zarri, Luca
Cupini, Giovanni	Fini, Riccardo	Sandrolini, Leonardo	Zucchelli, Andrea
Di Stefano, Luigi	Francaviglia, Stefano	Santarelli, Alberto	

Contract teaching staff:

Cacciari, Matteo

Conficoni, Christian

Mondaini, Davide

Sartini, Matteo

Vassura, Gabriele

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 OFA, 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
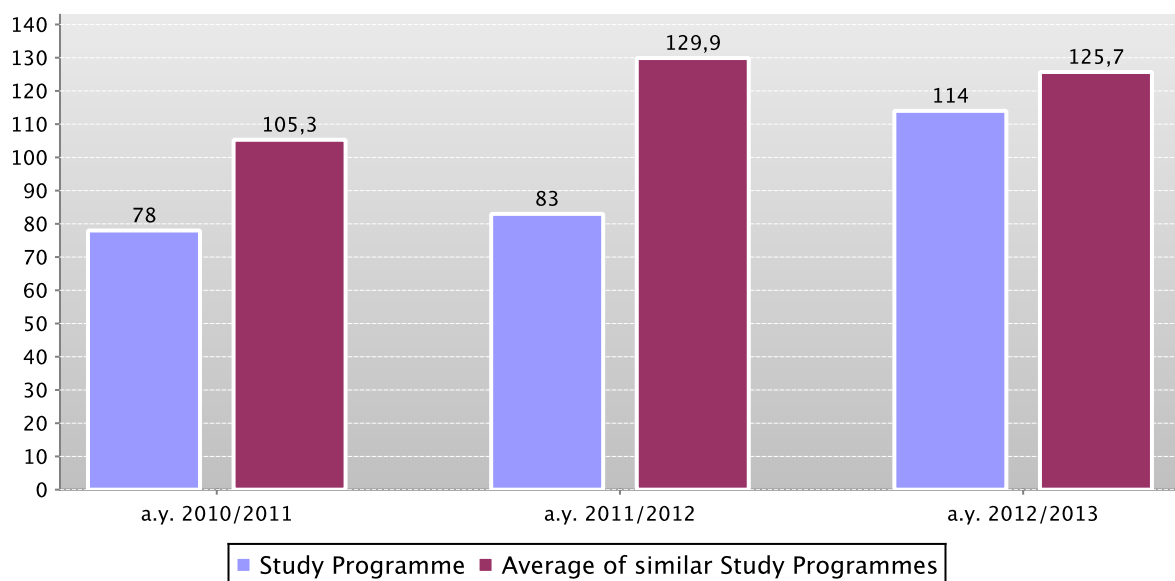
	a.y. 2010/2011			a.y. 2011/2012			a.y. 2012/2013		
	Registered students	N. first year enrolments	Total N. enrolled students	Registered students	N. first year enrolments	Total N. enrolled students	Registered students	N. first year enrolments	Total N. enrolled students
Study Programme	75	78	205	80	83	224	108	114	280
Average of similar Study Programmes	97,8	105,3	152,7	118,6	129,9	161,1	113	125,7	160,1

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

D.1.2.1. CANDIDATES REGISTERED FOR THE ENTRANCE EXAM

In academic year 2012/2013 access to this Study Programme was not restricted.

D.1.2.2. INCOMING STUDENTS

Geographic origin, type of high school certificate, age and gender of students.
Data shows a homogeneus 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 2010/2011	Study Programme	75	42,7%	25,3%	2,7%	26,7%	2,7%	90,7%	9,3%	80,0%	16,0%	4,0%
	Average of similar Study Programmes	97,8	34,6%	20,3%	7,6%	35,2%	2,3%	69,7%	30,3%	81,6%	16,1%	2,2%
Students 2011/2012	Study Programme	80	52,5%	13,8%	3,8%	28,8%	1,3%	92,5%	7,5%	85,0%	13,8%	1,3%
	Average of similar Study Programmes	118,6	33,4%	19,0%	7,8%	37,7%	2,2%	65,1%	34,9%	79,5%	18,1%	2,4%
Students 2012/2013	Study Programme	108	42,6%	20,4%	10,2%	24,1%	2,8%	87,0%	13,0%	81,5%	17,6%	0,9%
	Average of similar Study Programmes	113	30,9%	20,0%	7,9%	38,8%	2,4%	65,6%	34,4%	80,5%	17,3%	2,2%

		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		32,0%		56,0%	12,0%	20,0%	29,3%	18,7%	28,0%
	Average of similar Study Programmes	2,9%	29,3%	0,9%	60,8%	6,0%	19,6%	27,7%	25,0%	26,4%
Students 2011/2012	Study Programme	5,0%	36,3%		48,8%	10,0%	17,5%	25,0%	23,8%	28,8%
	Average of similar Study Programmes	2,7%	27,9%	2,0%	61,1%	6,3%	19,6%	26,4%	24,2%	27,2%
Students 2012/2013	Study Programme	0,9%	34,3%	0,9%	58,3%	5,6%	14,8%	24,1%	29,6%	27,8%
	Average of similar Study Programmes	2,5%	27,3%	2,0%	62,3%	5,9%	17,5%	26,6%	26,5%	24,9%

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 2010/2011	75	24	22	32,0%	91,7%
Students 2011/2012	80	39	27	48,8%	69,2%
Students 2012/2013	108	48			

*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
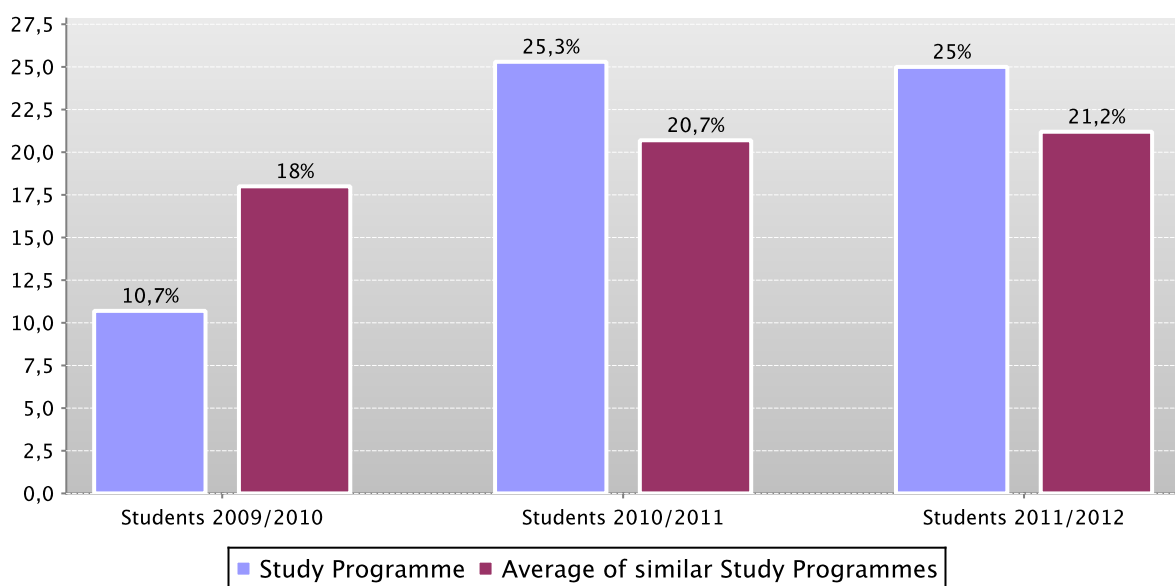
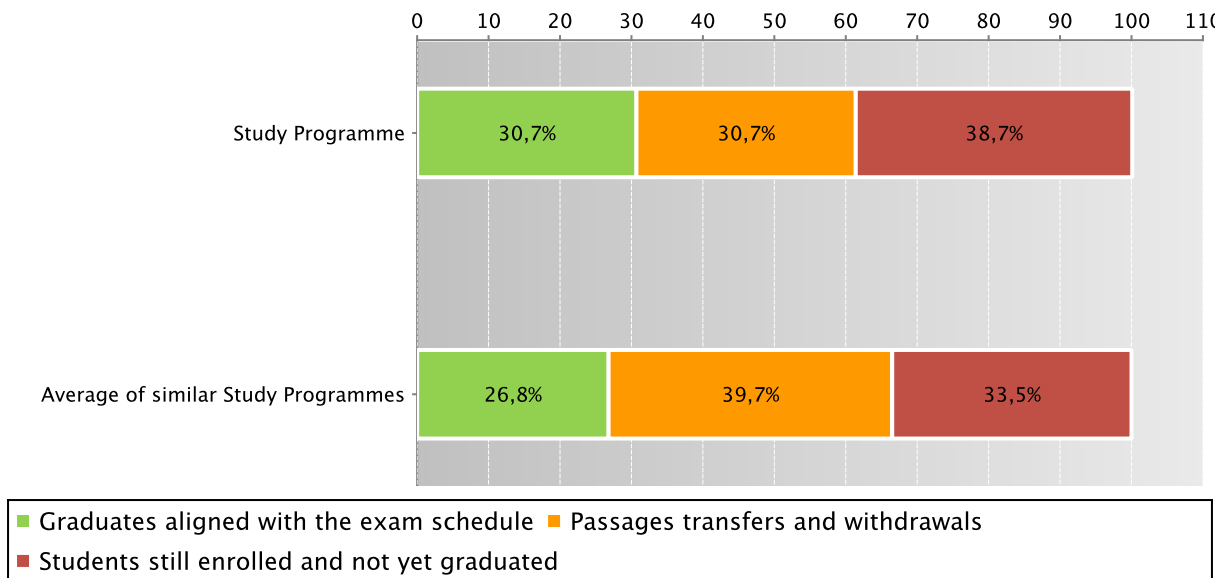|		Registered students	% withdrawals	% passages and transfers	% repeating students	Students enrolled in the second year
Students 2009/2010	Study Programme	75	10,7%	4,0%	2,7%	62
	Average of similar Study Programmes	86,5	18,0%	10,4%	2,3%	59,9
Students 2010/2011	Study Programme	75	25,3%	13,3%	0,0%	46
	Average of similar Study Programmes	97,8	20,7%	12,9%	2,8%	62,2
Students 2011/2012	Study Programme	80	25,0%	5,0%	1,3%	55
	Average of similar Study Programmes	118,6	21,2%	13,9%	2,0%	74,7

D.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

	Registered students	Regular graduates		Passages transfers and withdrawals		Students still enrolled and not yet graduated	
		N.	%	N.	%	N.	%
Study Programme	53	23	43,4%	11	20,8%	19	35,8%
Students 2008/2009 — Average of similar Study Programmes	77,1	19,8	25,7%	30,5	39,6%	26,8	34,8%
Study Programme	75	23	30,7%	23	30,7%	29	38,7%
Students 2009/2010 — Average of similar Study Programmes	86,5	23,2	26,8%	34,4	39,7%	29	33,5%

See data of previous academic years – Study Programme D.M. 509/99 Automation Engineering (code 0055) 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*
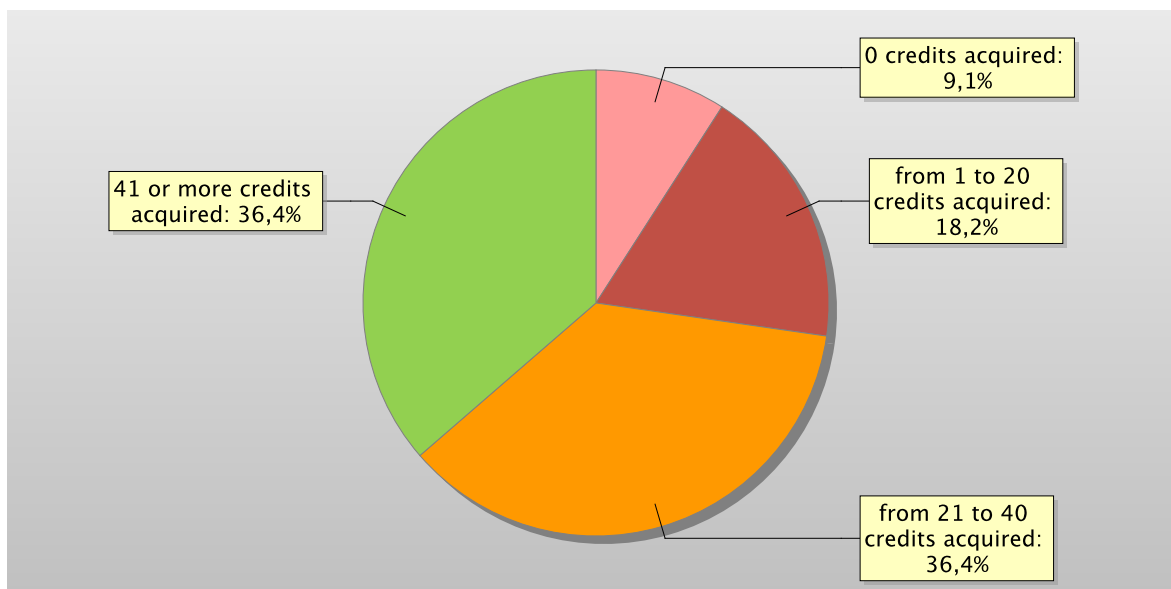
		Students enrolled in the 2nd year	% students with *				
			0 credits acquired	from 1 to 20 credits acquired	from 21 to 40 credits acquired	41 or more credits acquired	Average credits per student
Students 2009/2010	Study Programme	62	6,5%	21,0%	41,9%	30,6%	28,9
	Average of similar Study Programmes	59,9	4,3%	17,5%	40,5%	37,7%	33,3
Students 2010/2011	Study Programme	46	4,3%	21,7%	34,8%	39,1%	30,2
	Average of similar Study Programmes	62,2	5,1%	16,9%	40,1%	37,9%	33,1
Students 2011/2012	Study Programme	55	9,1%	18,2%	36,4%	36,4%	31,5
	Average of similar Study Programmes	74,7	5,1%	16,3%	39,0%	39,7%	33,7

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

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 Ingegneria dell'automazione (code 0920)

	N. of exams passed	Average grade *
27991 ANALISI MATEMATICA T-1	64	24,9
27993 ANALISI MATEMATICA T-2	45	25
27996 FISICA GENERALE T-1	40	24,4
28000 FISICA GENERALE T-2	39	25,7
28004 FONDAMENTI DI INFORMATICA T-1	37	25
28011 RETI LOGICHE T	29	24,9
28012 CALCOLATORI ELETTRONICI T	25	24
28029 ELETTROTECNICA T	45	23,9
28030 ECONOMIA E ORGANIZZAZIONE AZIENDALE T	59	25,1
28517 MECCANICA RAZIONALE T-1	10	22,2
28518 ELETTROTECNICA T-1	1	
28520 FONDAMENTI DI MECCANICA APPLICATA ALLE MACCHINE T-1	38	26,3
28523 FONDAMENTI DI MECCANICA APPLICATA ALLE MACCHINE T-2	24	26,2
28525 CONTROLLI AUTOMATICI T-2	19	26,4
28527 CONTROLLI AUTOMATICI T-1	40	25,6
28537 INGEGNERIA E TECNOLOGIE DEI SISTEMI DI CONTROLLO T	32	26,3
28540 ELECTRICAL CIRCUITS	1	
28541 FOUNDATIONS OF MECHANICS 1	1	
28542 FOUNDATIONS OF MECHANICS 2	1	
28543 AUTOMATIC CONTROL 1	2	
28544 AUTOMATIC CONTROL 2	2	
28553 ELECTRIC DRIVES	13	25,9
28555 AUTOMATIC MACHINES	13	27,2
28556 CONTROL SYSTEMS TECHNOLOGIES	13	27,2
28579 FOUNDATIONS OF ELECTRONICS	1	
28623 FONDAMENTI DI INFORMATICA E LABORATORIO T-AB	12	23,2
28631 FONDAMENTI DI ELETTRONICA PER L'AUTOMAZIONE T-1	3	
28642 FOUNDATIONS OF INDUSTRIAL ROBOTICS	25	26,8
28647 LABORATORY OF AUTOMATION SYSTEMS	30	25,2
29206 GESTIONE DELL'INNOVAZIONE E DEI PROGETTI M	1	
29228 GEOMETRIA E ALGEBRA T	33	25,1
29690 MECCANICA RAZIONALE T	52	23,2
34857 ROBOTICA INDUSTRIALE M	1	
37063 FONDAMENTI DI ELETTRONICA PER L'AUTOMAZIONE T	24	27,3
37064 AZIONAMENTI ELETTRICI T	29	25,9
37065 MACCHINE AUTOMATICHE T	39	25,9

	N. of exams passed	Average grade *
37066 LOGIC DESIGN OF DIGITAL SYSTEMS	1	
37067 COMPUTER ARCHITECTURES	12	24,3
37068 PRINCIPLES OF MANAGEMENT	13	22,5

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

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

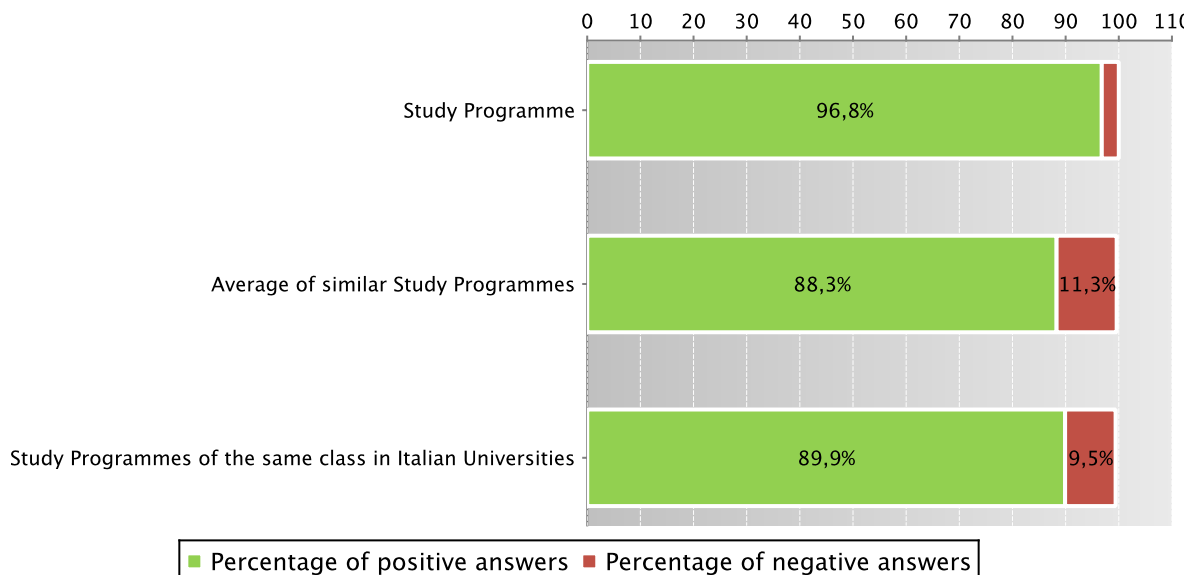The **graph** shows the percentage of graduates (AlmaLaurea survey) who responded positively to the question: "**Are you generally satisfied with the Study Programme"**.

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), and the average of Study Programmes of the same class of other Italian universities for the graduates of 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. 270/04 Ingegneria dell'automazione (code 0920)

Study Programme: 96,8%
Average of similar Study Programmes: 88,3% / 11,3%
Study Programmes of the same class in Italian Universities: 89,9% / 9,5%

■ Percentage of positive answers   ■ Percentage of negative answers

Data of the Study Programme D.M. 270/04 Ingegneria dell'automazione (code 0920)

		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"
2011	Study Programme	26	18	94,4%	83,3%
	Average of similar Study Programmes	23,7	22,8	88,9%	73,5%
	Study Programmes of the same class in Italian Universities	529	501	90,8%	83,2%
2012	Study Programme	39	31	96,8%	90,3%
	Average of similar Study Programmes	24,4	23,9	88,3%	72,3%
	Study Programmes of the same class in Italian Universities	1539	1469	89,9%	77,8%

Symbols:

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

Further information on Graduates' Profile Report.

See data of previous academic years – Study Programme D.M. 509/99 Automation Engineering (code 0055) 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 Ingegneria dell'automazione (code 0920) and of the Study Programme D.M. 509/99 Ingegneria dell'automazione (code 0055)
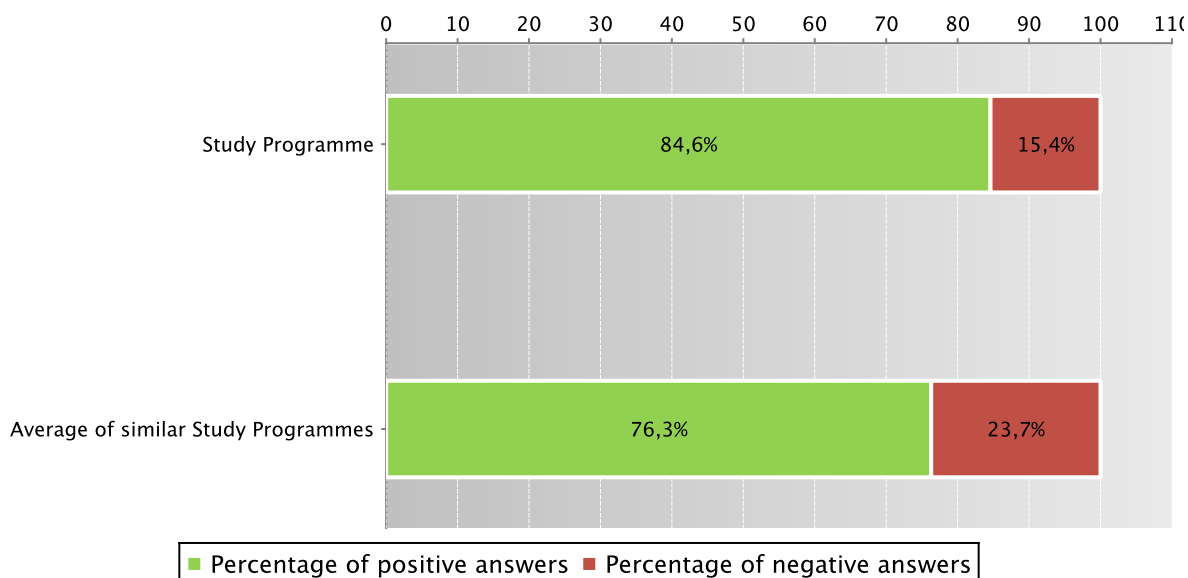
Data of the Study Programme D.M. 270/04 Ingegneria dell'automazione (code 0920) and of the Study Programme D.M. 509/99 Ingegneria dell'automazione (code 0055)

		Number of completed questionnaires	% of positive answers concerning the general satisfaction with the course unit – Question 19
a.y. 2009/2010	Study Programme	535	78,3%
	Average of similar Study Programmes	1006,2	75,2%
a.y. 2010/2011	Study Programme	848	83,3%
	Average of similar Study Programmes	1038	75,4%
a.y. 2011/2012	Study Programme	852	84,6%
	Average of similar Study Programmes	1243	76,3%

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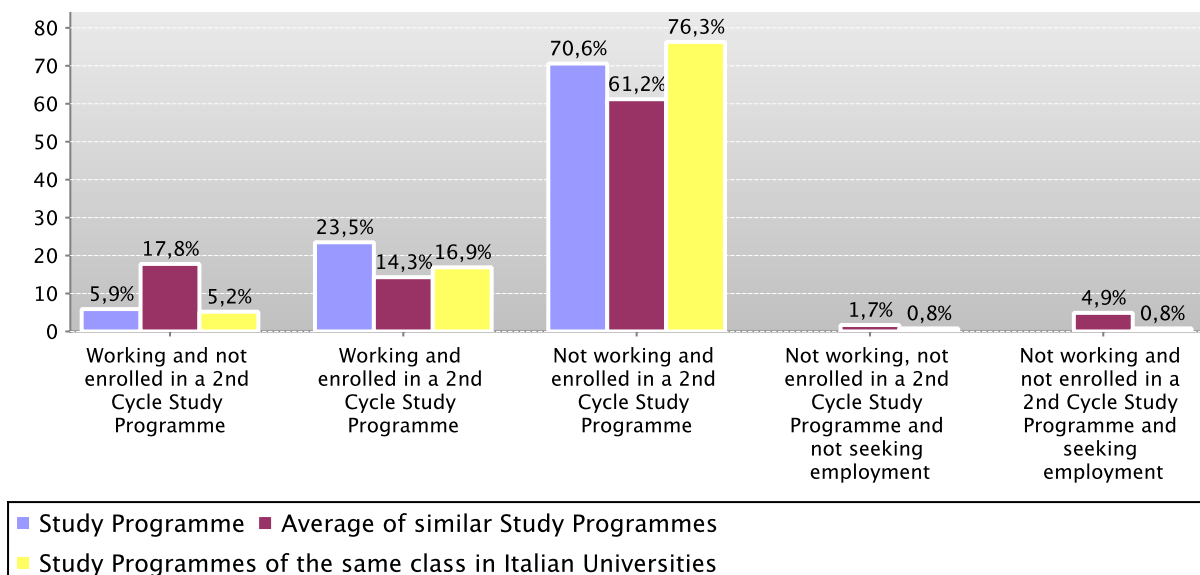
D.4. ENTRY INTO THE WORLD OF WORK

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

Employment situation of graduates in 2011 one year after graduating

		N. graduates interviewed	Employment and education situation (1)						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	Not working, not seeking employment, but following a university programme/traineeship (2)	Effective / very effective	Quite effective
Graduation Year 2011	Study Programme	17	5,9%	23,5%	70,6%			64,7%		60,0%
	Average of similar Study Programmes	21,7	17,8%	14,3%	61,2%	1,7%	4,9%	55,2%	33,5%	26,0%
	Study Programmes of the same class in Italian Universities	480	5,2%	16,9%	76,3%	0,8%	0,8%	70,2%	29,1%	22,3%

See data of previous academic years – Study Programme D.M. 509/99 Automation Engineering (code 0055) 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

Data of enrolments and registrations of the last three academic years are shown in paragraph D.1.1.

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

D.5.1.2.1. CANDIDATES REGISTERED FOR THE ENTRANCE EXAM

Data of candidates registered for the entrance exam are shown in paragraph D.1.2.1.

D.5.1.2.2. INCOMING STUDENTS

Data of incoming students of the last three academic years are shown in paragraph D.1.2.2.

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

Data of students leaving the Study Programme of the last three academic years are shown in paragraph D.2.1.
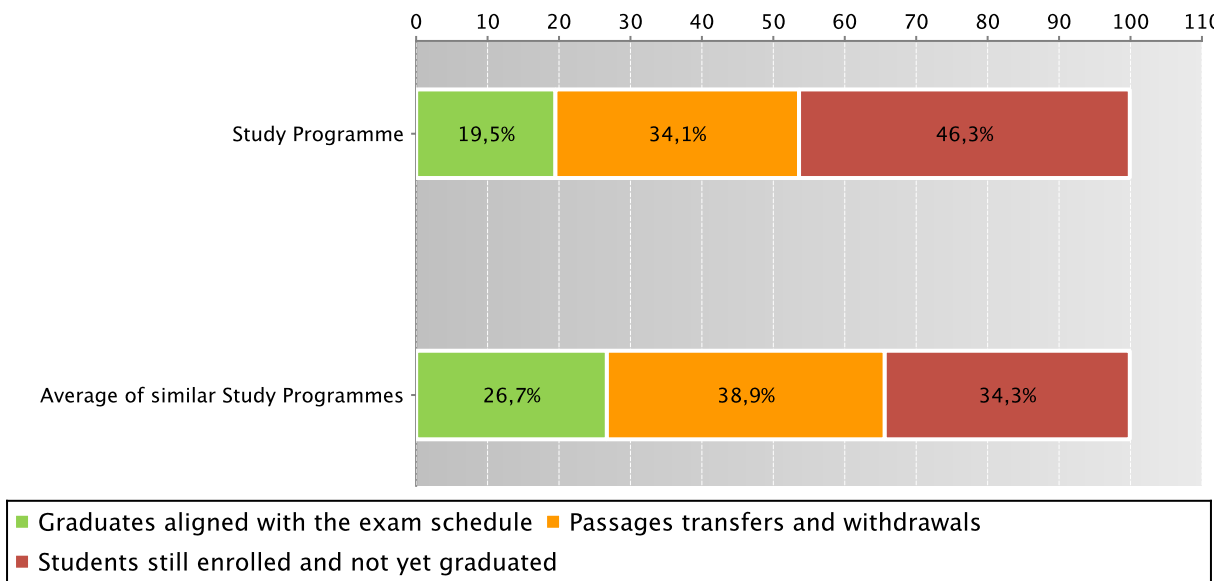
D.5.2.2. REGULAR GRADUATES

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 2007/2008 at the end of regular duration of the study programme

Data of the Study Programme D.M. 509/99 Automation Engineering (code 0055)

Data of the Study Programme D.M. 509/99 Automation Engineering (code 0055)

		Registered students	Regular graduates		Passages transfers and withdrawals		Students still enrolled and not yet graduated	
			N.	%	N.	%	N.	%
Students 2007/2008	Study Programme	41	8	19,5%	14	34,1%	19	46,3%
	Average of similar Study Programmes	72,8	19,5	26,7%	28,4	38,9%	25	34,3%

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

Data of credits obtained by students in the 1st year of the last three academic years are shown in paragraph D.2.3.1.

D.5.2.3.2. EXAMS PASSED AND AVERAGE GRADE

Data of exams passed and average grade are shown in paragraph D.2.3.2.

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 2010 who responded positively to the question: "Are you generally satisfied with this Study Programme?"

Data of the Study Programme D.M. 509/99 Ingegneria dell'automazione (code 0055)
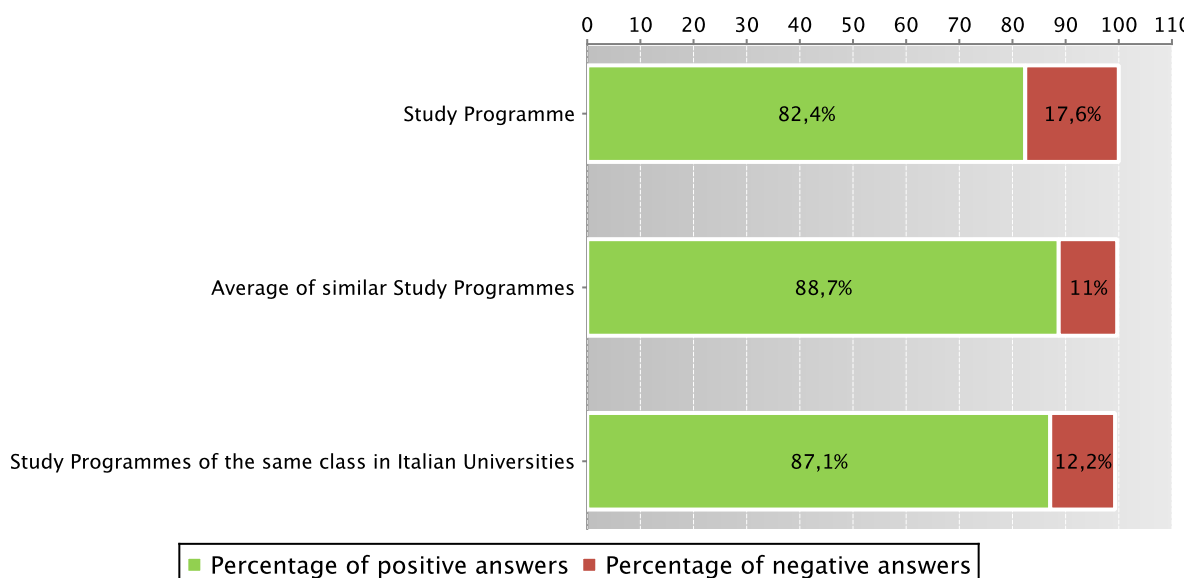
Data of the Study Programme D.M. 509/99 Ingegneria dell'automazione (code 0055)

		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	18	17	82,4%	76,5%
	Average of similar Study Programmes	44,6	43,4	88,7%	72,5%
	Study Programmes of the same class in Italian Universities	4058	3910	87,1%	69,6%

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.
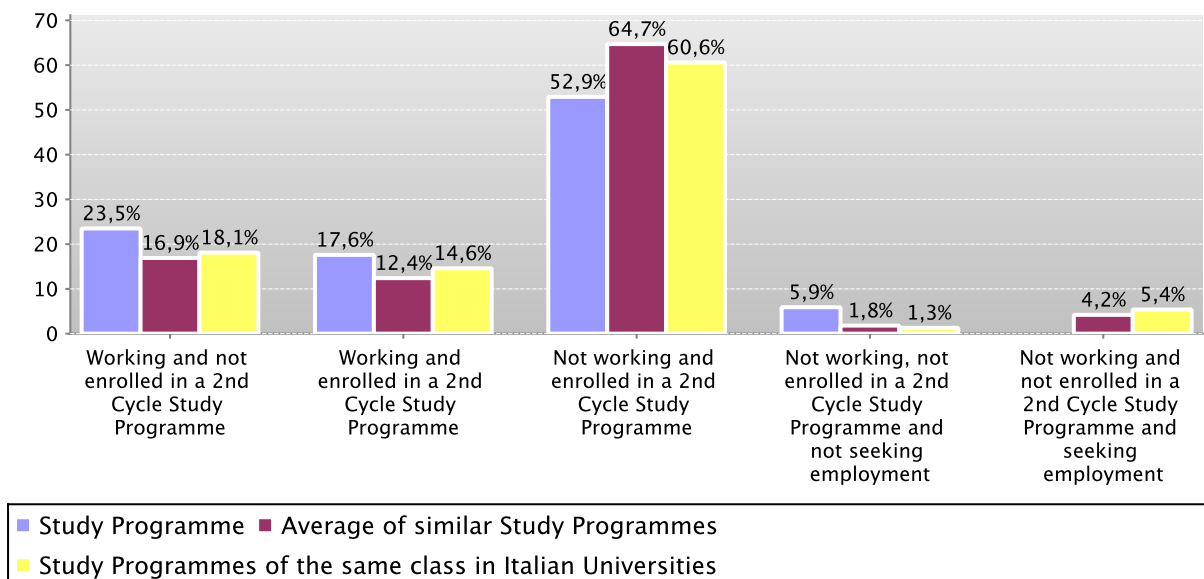The **graph** shows who is working, who is not working but has enrolled in a Second Cycle study programme, who is not working and is not seeking employment, who is not working but is seeking employment.
In addition, the **table** shows the number of graduates interviewed, the number involved in internships 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 2010 one year after graduating

Data of the Study Programme D.M. 509/99 Automation Engineering (code 0055)

Data of the Study Programme D.M. 509/99 Automation Engineering (code 0055)

		N. graduates interviewed	Employment and education situation (1)						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	Not working, not seeking employment, but following a university programme/traineeship (2)	Effective / very effective	Quite effective
Graduation Year 2009	Study Programme	28	35,7%	14,3%	50,0%			42,9%	42,9%	21,4%
	Average of similar Study Programmes	43,1	19,0%	11,8%	62,8%	1,9%	4,5%	58,0%	34,5%	32,8%
	Study Programmes of the same class in Italian Universities	3938	15,8%	14,7%	62,7%	1,5%	5,3%	51,2%	30,3%	37,1%
Graduation Year 2010	Study Programme	17	23,5%	17,6%	52,9%	5,9%		52,9%	14,3%	42,9%
	Average of similar Study Programmes	40,6	16,9%	12,4%	64,7%	1,8%	4,2%	59,0%	30,8%	34,6%
	Study Programmes of the same class in Italian Universities	3738	18,1%	14,6%	60,6%	1,3%	5,4%	50,2%	31,7%	39,7%

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.

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
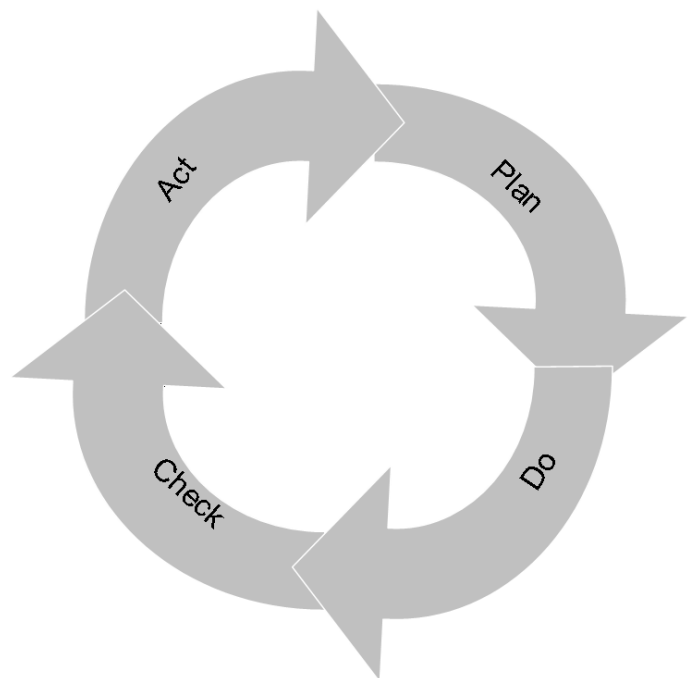
This path responds to the expectations of students, guides teaching behaviour and provides indicators for the assessment of results. Self-assessment is based on the analysis of significant data (for example, the number of students graduating in line with the exam schedule, students' opinions and the 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
Definition, gathering and publication of evaluation data 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.	Academic Bodies
Self-Assessment 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.	Schools and Study Programmes

Internal audit

The results of the self-assessment process are reviewed in the following phases:

- Analysis: 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.

- Review: 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.

- Sharing: the conclusions of the review activities are submitted to the Academic Bodies and the University Evaluation Board.

Quality Manager

Vice Rector for Teaching and Education

Academic Bodies

- **Improvement**: 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.

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

In 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.