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ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



School of Agriculture and Veterinary Medicine
LAUREA MAGISTRALE (SECOND CYCLE
DEGREE/TWO YEAR MASTER - 120
ECTS) IN ANIMAL BIOTECHNOLOGY
A.Y. 2016/2017

Programme Director Prof. Barbara Brunetti

REPORT

Study Programme Report
Animal Biotechnology
Programme ex D.M. 270/04 - Code 8522 - Class LM-9
School of Agriculture and Veterinary Medicine
Programme Director Prof. Barbara Brunetti

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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 services 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 2016/2017: the information and data provided is as updated as possible.
- Sections A, B and C provide data for the academic year 2016/2017.
- The section D presents data regarding the Study Programmes in the last three academic years. 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. When Study Programme data are not available for three academic years, for some information the data of the previous Study Programme are available, too (as for example, the number and the opinion of the graduates, the employment situation). Graphs and tables about attending students opinions and exchange students mobility refers to students whether they are enrolled/graduated in the current programme or in the Study programme running under previous reform regulations (D.M. 509).
- The information and data were taken from the University databases and the reports published by [AlmaLaurea](#), and are updated to **6 May 2015**.

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 2016/2017.

A.1. PRESENTATION

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

The degree programme in Animal Biotechnologies sets out to train professional figures able to perform and coordinate research and analyses linked to the cellular and molecular aspects of animal health, and consequently human health.

Graduates are able to perform basic and applied research in a range of sectors including veterinary medicine, pharmacology, diagnostics, epidemiology and food safety.

They may particularly work in animal research to study human diseases, significantly contributing to the scientific bases of innovative approaches to diagnosis and treatment of disease, including gene therapy, stem cells and reproductive biotechnologies.

They may also work in the technical and sales areas of companies specialising in human and animal nutrition.

After sitting the state exam and registering with the National Association of Biologists, they may also hold management positions in analytical laboratories.

Graduates are particularly able to perform the following:

- 1) laboratory activities to study and identify cures for animal diseases;
- 2) in vivo and in vitro modelling to study human diseases;
- 3) laboratory activities linked to reproductive biotechnologies;
- 4) food hygiene, quality and safety.

The adopted learning model is inductive, based on a learning process that develops a simultaneous mix of basic, technical, professional and transversal knowledge.

The curriculum is structured in four areas of knowledge:

- **DIAGNOSTICS** This theoretical and practical knowledge starts with basic cell and molecular techniques, developing through a range of disciplines aiming on one hand to identify specific pathological conditions in animals and on the other to study in-depth the models and progression of the diseases as a result of interference factors including drugs, innovative foods, genetics, etc.

- **ANIMAL MODELS** This highly interdisciplinary knowledge is gained in all course units, allowing students to understand the possibilities afforded by spontaneous and induced models of animal diseases. These models are considered fundamental instruments for the study of human diseases and syndromes and the effectiveness of conventional or innovative pharmacological approaches including gene therapy, stem cells, nutrigenomics. These competences are not strictly linked to a specific professional activity, but can be applied to medical, pharmacological, zootechnical research, or the food industry, and become part of the researchers' professional heritage, allowing them to develop a holistic vision of the problem studied, which, together with communication, interpersonal, decision making and problem solving skills, is essential to work in a team leader capacity in research projects or industrial R&D activities.

- **REPRODUCTION** These highly specialist competences are closely linked to a specific professional context, allowing graduates to work with animal embryos and gametes, also in genetic manipulation, transgenic organisms and cloning. These competences, combined with genetic skills and the ability to establish and use stem cells, provide the grounding to work in both animal and human research and clinical activities.

- **FOOD QUALITY AND SAFETY** In their dual role as both consumers and food source, animals are heavily involved in the food safety and quality process. Knowledge of biochemistry of nutrition and traditional and functional foods, etiopathogenesis and principles of prevention and control of transmissible diseases, the principles of legislation and molecular analytical methods are decisive skills allowing graduates to work in this specific professional area.

The ability to apply knowledge and understanding is developed through lectures and a significant amount of seminars, group work, practical activities and exercises, field trips, a curricular internship and the production of the final dissertation. The latter activities can be performed in approved businesses in Italy or abroad, and are systematically promoted by the degree programme. A further important element developing this knowledge is the students' self-study, an opportunity to further process the acquired information in order to assure a stronger command of the curriculum.

A teaching laboratory equipped for the main biomolecular techniques is available specifically for this purpose. Training may also be integrated by the attendance of laboratories for research and diagnostic activities running at the Department of Veterinary Medical Science or externally.

The ability to apply knowledge and understanding is assessed in oral and written exams, and through the assessment of written papers and essays produced by students and the discussion of problems in group work, where students demonstrate their command of the instruments and methods introduced during the study programme.

All core course units in the degree programme are functional to the development of the identified professional profiles.

The programme aims to offer specific cultural competences but at the same time to provide the technical means and interpretative methods applicable to a wide range of laboratory activities, from simple diagnostics to complex research in all biological and biotechnological areas.

The programme curriculum covers a series of core and supplementary learning activities.

A.2. LEARNING OUTCOMES

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

This content is not currently available.

A.3. CAREER OPPORTUNITIES

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

This content is not currently available.

A.4. 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.5. FURTHER STUDIES

It gives access to third cycle studies (Dottorato di ricerca/Scuole di specializzazione) and master universitario di secondo livello.

B. TEACHING AND LEARNING

This section describes the updated course structure diagram (for academic year 2016/2017), 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).

- [Course timetable](#)
- [Examination 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 2016/2017.

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 (in Italian). Information updated to 13 June 2016.

Permanent teaching staff:

Accorsi, Pier Attilio	Fontanesi, Luca	Nesci, Salvatore	Sartor, Giorgio
Adinolfi, Felice	Forni, Monica	Pagliuca, Giampiero	Spinaci, Marcella
Andreani, Giulia	Galli, Cesare	Peccolo, Giampaolo	Trombetti, Fabiana
Barbarossa, Andrea	Gentilini, Fabio	Pession, Annalisa	Zambonelli, Paolo
Battilani, Mara	Giardino, Luciana	Piva, Andrea	Zannoni, Augusta
Brunetti, Barbara	Isani, Gloria	Piva, Silvia	
Calzà, Laura	Lupini, Caterina	Sarli, Giuseppe	

Contract teaching staff:

[Bernardini, Chiara](#)

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).

- [Prospective students](#)

C.2.2. ENROLLED STUDENTS

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

- [Current students](#)

C.2.3. INTERNATIONAL STUDENTS

The links take you to the reference Work Placement and International Relations office for the Study Programme, where available.

- [Exchange students](#)

C.2.4. GRADUATES

- [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 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 6 May 2016, 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.

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. When Study Programme data are not available for three academic years, for some information the data of the previous Study Programme are available, too (as for example, the number and the opinion of the graduates, the employment situation). Graphs and tables about attending students opinions and exchange students mobility refers to students whether they are enrolled/graduated in the current programme or in the Study programme running under previous reform regulations (D.M. 509).

From the publication of this study programme report is updated the procedure of the selection of the cohorts: the student belongs to the cohort of the study programme on which one has been enrolled on 31 December of the year of the beginning of student career.

D.1. STUDENTS STARTING THEIR UNIVERSITY CAREERS

Characteristics of the incoming students at the beginning of their study. The tables and the graphs provide information on the characteristics of the students and on the results of any entrance tests.

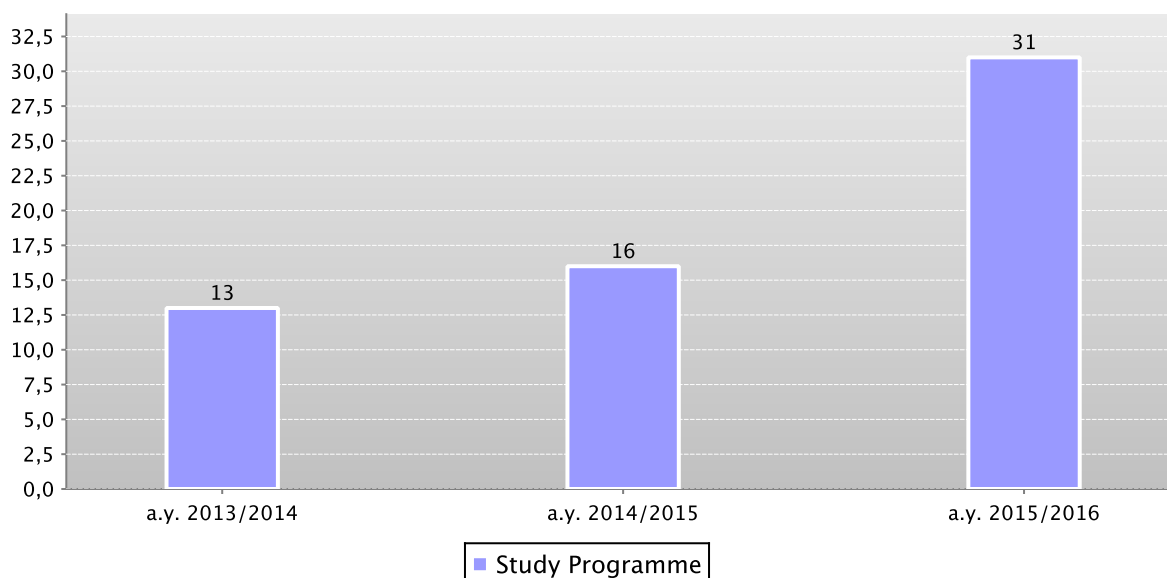
D.1.1. ENROLLED

The **graph** shows the number of **students enrolled in the 1st year**.

In addition, the **table** shows for each academic year the number of the students of the cohort and the enrolled students for each year of the programme.

First year enrolments

Data of the Study Programme D.M. 270/04 Animal Biotechnology (code 8522)



Data of the Study Programmes D.M. 270/04 School of Animal Biotechnology (code 8207), Animal Biotechnology (code 8522)

	Students of the cohort	Students enrolled		
		Students enrolled at the first year	Students enrolled at the second year	Students enrolled on supplementary year
a.y. 2013/2014	13	13	9	1
a.y. 2014/2015	16	16	13	1
a.y. 2015/2016	30	31	16	1

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

D.1.2.1. REGISTERED FOR THE ENTRANCE EXAMINATIONS OF THE STUDY PROGRAMMES WITH RESTRICTED ACCESS

In academic year 2015/2016 access to this Study Programme was not restricted.

D.1.2.2. INCOMING STUDENTS

Data shows a group of students (**cohort**) which started on the same academic year their students career. Students which have been **transferred** or which requested to **passed** to another Study Programme are not included.

From the publication of this study programme report is updated the procedure of the selection of the cohorts: the student belongs to the cohort of the study programme on which one has been enrolled on 31 December of the year of the beginning of student's career. The **tables** show the number, geographic origin, citizenship, gender, age, type of diploma and grade of high school of the students of the cohort.

The Study Programme data is compared with the **average of similar Study Programmes (which belong to the same group)**. To remind that for the same grouping could include Study Programmes with a different entrance access and some of them could have restricted access.

Data of the Study Programme D.M. 270/04 Animal Biotechnology (code 8522)

	Students of the cohort	Geographic origin							Gender		Average age of new career students		
		Students coming from the province of the Study Programme site	Students coming from other provinces where Umbro has a site	Students coming from other provinces of Emilia Romagna region	Students coming from other Italian regions (Republic of San Marino included)	Students coming from abroad	Students with foreign citizenship (different of Italian and Republic of San Marino)	M	F	22 or less	23 - 24	25 or more	
Cohort 2013/2014	Study Programme	13	7,7%	15,4%		61,5%	15,4%	15,4%	30,8%	69,2%	38,5%	46,2%	15,4%
	Average of similar Study Programmes	34,8	20,1%	10,0%	11,9%	57,1%	1,0%	2,5%	45,6%	54,4%	28,9%	49,6%	21,5%
Cohort 2014/2015	Study Programme	16	18,8%			68,8%	12,5%	18,8%	25,0%	75,0%	18,8%	43,8%	37,5%
	Average of similar Study Programmes	44,1	19,6%	12,1%	13,7%	53,3%	1,2%	3,2%	46,2%	53,8%	31,1%	49,2%	19,6%
Cohort 2015/2016	Study Programme	30	20,0%	16,7%	10,0%	46,7%	6,7%	13,3%	33,3%	66,7%	26,7%	56,7%	16,7%
	Average of similar Study Programmes	42,1	19,5%	11,9%	11,3%	55,4%	1,9%	3,4%	49,3%	50,7%	28,7%	49,8%	21,5%

		First Cycle Degree: grade						First Cycle Degree: University of previous studies				First Cycle Degree: more frequent class	
		First Cycle Degree grade between 66 and 90	First Cycle Degree grade between 91 and 100	First Cycle Degree grade between 101 and 105	First Cycle Degree grade between 106 and 110	First Cycle Degree grade 110 and honors	First Cycle Degree grade not available	University of Bologna	Other Italian Universities (Republic of San Marino included)	Foreign University	Other not defined	Class code and name	% of students
Cohort 2013/2014	Study Programme	15,4%	15,4%	23,1%	30,8%	15,4%		30,8%	46,2%	23,1%		L-2 BIOTECNOLOGIE, 0 SENZA CLASSE, L-38 SCIENZE ZOOTECNICHE E TECNOLOGIE DELLE PRODUZIONI ANIMALI	23,1%
	Average of similar Study Programmes	5,7%	36,6%	20,5%	19,3%	14,4%	3,4%	50,2%	46,0%	1,0%	2,9%	L-22 SCIENZE DELLE ATTIVITA' MOTORIE E SPORTIVE	17,0%
Cohort 2014/2015	Study Programme	37,5%	18,8%	12,5%	12,5%	18,8%		31,3%	50,0%	18,8%		L-38 SCIENZE ZOOTECNICHE E TECNOLOGIE DELLE PRODUZIONI ANIMALI	31,3%
	Average of similar Study Programmes	7,9%	34,6%	22,7%	17,8%	13,0%	4,1%	53,5%	41,7%	0,5%	4,4%	L-22 SCIENZE DELLE ATTIVITA' MOTORIE E SPORTIVE	22,8%
Cohort 2015/2016	Study Programme	13,3%	36,7%	23,3%	13,3%	10,0%	3,3%	53,3%	33,3%	3,3%	10,0%	L-38 SCIENZE ZOOTECNICHE E TECNOLOGIE DELLE PRODUZIONI ANIMALI	50,0%
	Average of similar Study Programmes	7,7%	32,8%	22,3%	19,9%	15,2%	2,1%	49,5%	45,9%	0,7%	3,9%	L-22 SCIENZE DELLE ATTIVITA' MOTORIE E SPORTIVE	19,9%

D.2. REGULARITY OF STUDIES

The graph and the table provide information on the number of students who withdraw the programme between the first and second year and the number of regular graduates, focusing on the number of credits obtained at the end of the first year, on the passed exams, average grade achieved for each course unit and exchange students' data.

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

Data shows a group of students (cohort) which started on the same academic year their students career. Students which have been transferred or which requested to pass to another Study Programme are not included.

From the publication of this study programme report is updated the procedure of the selection of the cohorts: the student belongs to the cohort of the study programme on which one has been enrolled on 31 December of the year of the beginning of student career.

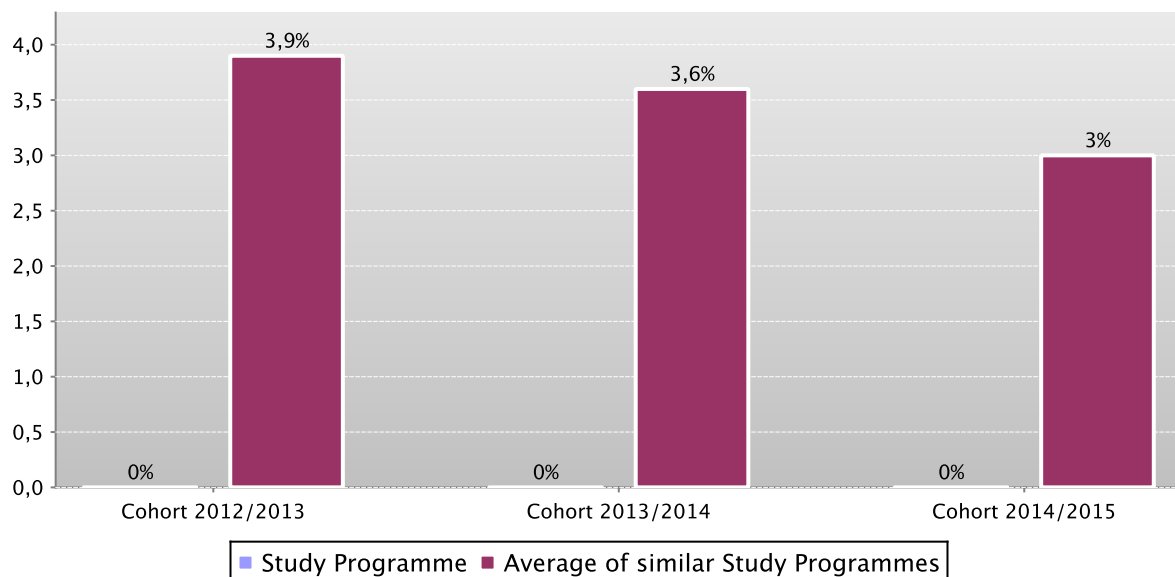
The graph shows the percentage of students who withdrawal the studies after the first year compared to the average of similar Study Programmes (belonging to the same group).

The table shows the numerosity of the cohort, the percentage of students leaving the programme due to withdrawal from studies, passages to a different Study Programme in the same university or transfers to another university, the percentage of the students enrolled as repeating students and those enrolled in the second year.

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

Percentage of withdrawal from studies between 1st and 2nd year

Data of the Study Programme D.M. 270/04 Animal Biotechnology (code 8522)



Data of the Study Programme D.M. 270/04 Animal Biotechnology (code 8522)

		Students of the cohort	% withdrawal from studies	% passages and transfers	% repeating students	Students of the cohort in the 2nd year
Cohort 2012/2013	Study Programme	6	0,0%	0,0%	0,0%	6
	Average of similar Study Programmes	34,2	3,9%	0,8%	0,2%	32,5
Cohort 2013/2014	Study Programme	13	0,0%	0,0%	0,0%	13
	Average of similar Study Programmes	34,8	3,6%	0,8%	0,0%	33,3
Cohort 2014/2015	Study Programme	16	0,0%	0,0%	0,0%	16
	Average of similar Study Programmes	44,1	3,0%	1,1%	0,0%	42,3

D.2.2. REGULAR GRADUATES

Data shows a group of students (**cohort**) which started on the same academic year their university career. Students which have been **transferred** or which requested to pass to another Study Programme are not included.

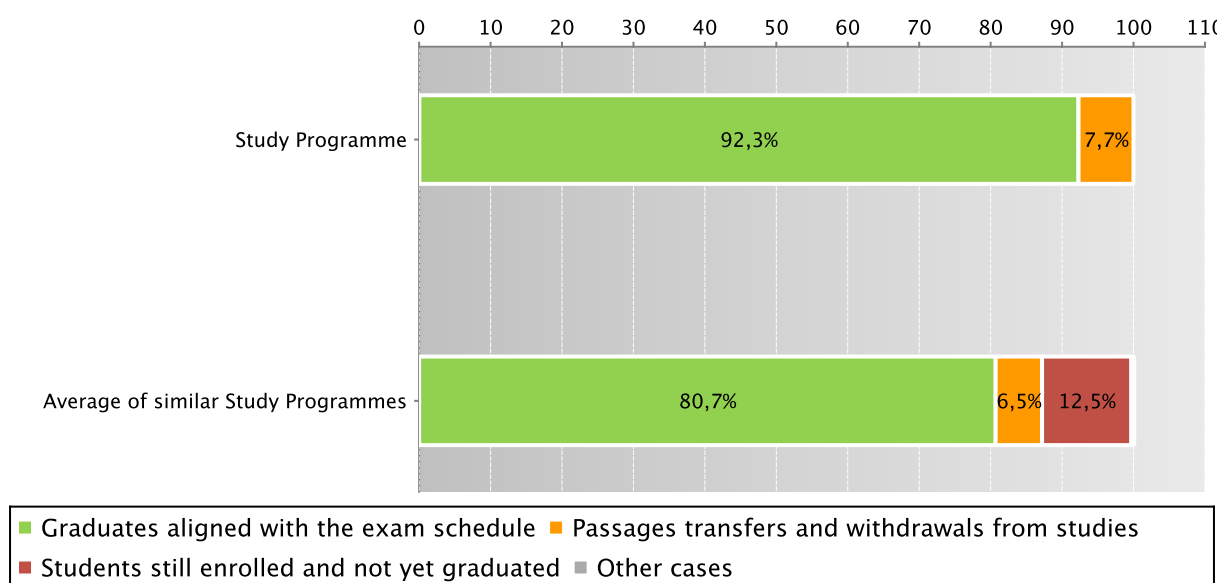
From the publication of this study programme report is updated the procedure of the selection of the cohorts: the student belongs to the cohort of the study programme on which one has been enrolled on 31 December of the year of the beginning of student career.

The **graph** and the **table** show the situation of the indicated cohorts, at the end of the standard length of study, 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 from studies**).

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

Situation of the students of the cohort 2013/2014 at the end of the regular duration of the studies

Data of the Study Programme D.M. 270/04 Animal Biotechnology (code 8522)



Data of the Study Programme D.M. 270/04 Animal Biotechnology (code 8522)

	Students of the cohort	Regular graduates		Passages, transfers and withdrawals from studies		Students still enrolled and not yet graduated		
		N.	%	N.	%	N.	%	
Cohort 2011/2012	Study Programme	5	4	80,0%	1	20,0%	0	0,0%
	Average of similar Study Programmes	32,8	24,3	74,0%	2,1	6,5%	6,2	18,9%
Cohort 2012/2013	Study Programme	6	6	100,0%	0	0,0%	0	0,0%
	Average of similar Study Programmes	34,2	26,7	78,2%	2,8	8,2%	4,5	13,3%
Cohort 2013/2014	Study Programme	13	12	92,3%	1	7,7%	0	0,0%
	Average of similar Study Programmes	34,8	28,1	80,7%	2,3	6,5%	4,3	12,5%

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.

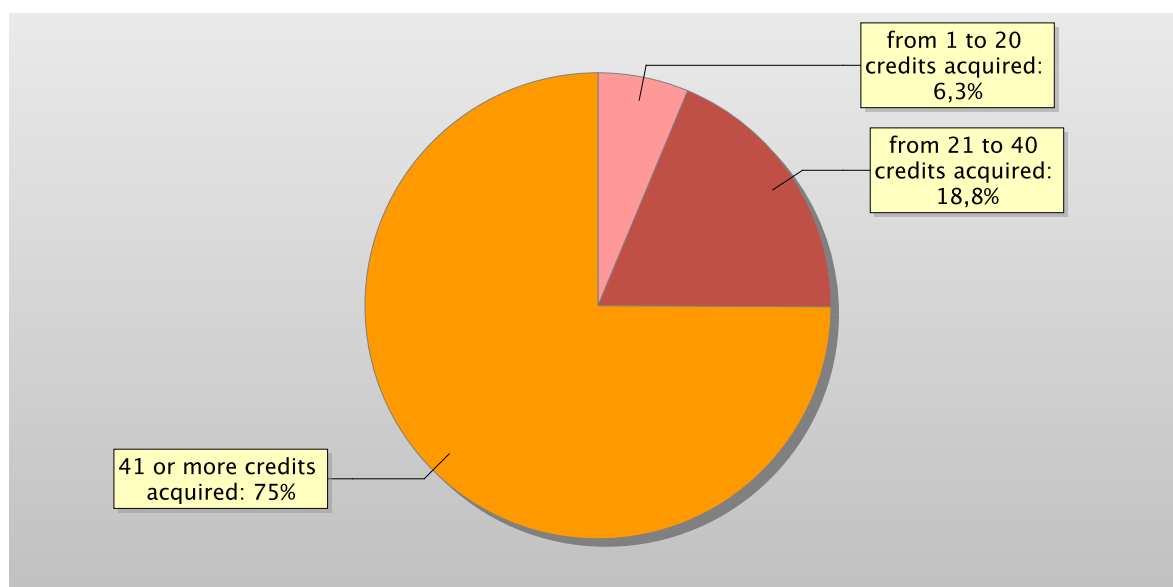
The **graph** shows the distribution of the students of the cohort who passed at the second year, in the same Study Programme, according to the number of **credits** obtained at 31 October of the year after the enrollment.

In addition, the **table** shows the number of the cohort of students enrolled at the second year in the same Study Programme and the average **credits** obtained from the students 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 of the cohort 2014/2015 (at 2nd year) based on the number of credits obtained during the 1st year *

Data of the Study Programme D.M. 270/04 Animal Biotechnology (code 8522)



Data of the Study Programme D.M. 270/04 Animal Biotechnology (code 8522)

		Students of the cohort enrolled at 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	
Cohort 2012/2013	Study Programme	6			16,7%	83,3%	46
	Average of similar Study Programmes	32,5	1,8%	7,4%	35,0%	55,7%	42
Cohort 2013/2014	Study Programme	13		7,7%	30,8%	61,5%	42,2
	Average of similar Study Programmes	33,3	1,0%	8,4%	29,9%	60,7%	41,9
Cohort 2014/2015	Study Programme	16		6,3%	18,8%	75,0%	45,9
	Average of similar Study Programmes	42,3	1,7%	9,4%	36,5%	52,3%	39,9

*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, in an alphabetical order of the course units, number of exams passed and average grade achieved for each course unit in the calendar year 2015. 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.

Course units which pass/fail score are excluded.

Data of the Study Programmes D.M. 270/04 School of Animal Biotechnology (code 8207), Animal Biotechnology (code 8522)

	N. of exams passed	Average grade *
66425 ALIMENTI, NUTRIZIONE E METABOLISMO (C.I.)	1	
72709 APPLICAZIONI DI GENOMICA AVANZATA NELLE PRODUZIONI ANIMALI	12	29,8
66429 ATTIVITA' SPERIMENTALE NEL LABORATORIO BIOTECNOLOGICO (C.I.)	15	28,5
72710 BIOCHIMICA DEGLI ALIMENTI E DELLA NUTRIZIONE	13	28,2
72711 BIOTECNOLOGIE APPLICATE ALLA RIPRODUZIONE ANIMALE, INGEGNERIA GENETICA E CLONAZIONE DEGLI ANIMALI D'ALLEVAMENTO	13	28,8
66443 BIOTECNOLOGIE DELLA NUTRIZIONE ANIMALE E DEGLI ALIMENTI TRADIZIONALI E FUNZIONALI	25	23,6
72722 CELLULE STAMINALI IN MEDICINA RIGENERATIVA	17	28,9
78989 ECONOMIA PER LE BIOTECNOLOGIE	1	

	N. of exams passed	Average grade *
72712 FISILOGIA ED ENDOCRINOLOGIA VETERINARIA	15	28,1
66446 METODICHE BIOMOLECOLARI APPLICATE ALLE MALATTIE TRASMISSIBILI	12	29,3
76456 NEUROBIOLOGIA E MODELLI ANIMALI DI MALATTIE NEUROLOGICHE	14	29,9
72723 PATOLOGIA GENERALE 2 E ANATOMIA PATOLOGICA DEGLI ANIMALI DA LABORATORIO	13	29,9
66430 PATOLOGIA GENERALE VETERINARIA E ONCOGENESI MOLECOLARE	17	27,9
72724 SALUTE ANIMALE E SICUREZZA DEGLI ALIMENTI PER L'UOMO (C.I.)	11	29,7

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

D.2.4. ADDITIONAL DATA ON INTERNATIONALIZATION

The table shows data about international students mobility: incoming and outgoing.

Data refers to Study programme students independently of enrollment as the current programme or in the Study programme running under previous reform regulations (D.M. 509).

D.2.4.1. EXAMS PASSED BY THE INCOMING EXCHANGE STUDENTS

The **table** shows the number of incoming exchange students who attended course units provided by the Study Programme and passed the exam. The table shows the total number of exams passed by these students during the academic year spent at the University of Bologna.

The data is provided by the [AlmaRM](#) application: system implemented by the University of Bologna in order to manage online student mobility programs.

It should be noted that incoming exchange students means exchange students from universities with which mobility agreements have been stipulated.

The table refers to exchange incoming students whether they attended course units provided by the current programme or to the Study programme running under previous reform regulations (D.M. 509).

-
- The row is not available in the table in case for one academic year the number of the incoming exchange students is equal to zero.
 - The table is not available if the previous condition occurs for the three academic years 2012/13, 2013/14 and 2014/15.
-

*Note: in case the study plan of the exchange student provides course units offered by more Study Programmes, the student is reported in the statistics of all the Study Programmes involved.

Data of the Study Programmes D.M. 270/04 School of Animal Biotechnology (code 8207), Animal Biotechnology (code 8522) and of the Study Programme D.M. 509/99 Animal Biotechnologies (code 0459)

	Incoming exchange students *	Total exam passed by the incoming exchange students
a.y. 2013/2014	1	4
a.y. 2014/2015	2	3

D.2.4.2. OUTGOING EXCHANGE STUDENTS

The **table** shows the number of outgoing students participating in a certain academic year in one of the following international mobility exchange programmes: Erasmus Study, Erasmus Placement, Erasmus Mundus Action 2, Overseas.

The data is not including students participating to different mobility and educational activities in the context of further opportunity of studying abroad offered by the Study Programme, the School, and the University of Bologna (for example scholarships for the development of the thesis abroad are not included).

The data is provided by the [AlmaRM](#) application: system implemented by the University of Bologna in order to manage online student mobility programs.

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

Table refers to students whether they are enrolled in the current programme or in the Study programme running under previous reform regulations (D.M. 509).

Data of the Study Programmes D.M. 270/04 School of Animal Biotechnology (code 8207), Animal Biotechnology (code 8522) and of the Study Programme D.M. 509/99 Animal Biotechnologies (code 0459)

		Total N. enrolled students	Number of students taking part in the following exchange programmes			Total number of exchange students	% participants (Participants of exchange programmes / Total number enrolled students)
			Erasmus Study	Erasmus Placement	Overseas		
a.y. 2012/2013	Study Programme	17				0	0,0%
	Average of similar Study Programmes	74,7	1,3	1		2,3	3,0%
a.y. 2013/2014	Study Programme	23				0	0,0%
	Average of similar Study Programmes	79,5	2,1	1,7	0,1	3,8	4,8%
a.y. 2014/2015	Study Programme	30		2		2	6,7%
	Average of similar Study Programmes	88,3	1,4	1,7	0,3	3,3	3,8%

D.2.4.3. CREDITS OBTAINED ABROAD BY GRADUATES

The **table** shows the percentage of graduates in a certain calendar year with credits obtained abroad and traced in their students career. The Study Programme data is compared with the **average of similar Study Programmes** (which belong to the same group), for the indicated calendar years.

Data refers to graduates independently if attended in the current programme or in the Study programme running under previous reform regulations.

Data of the Study Programme D.M. 270/04 Animal Biotechnology (code 8522) and of the Study Programme D.M. 509/99 Animal Biotechnologies (code 0459)

		Total N. of graduates in the calendar year	Graduates with credits acquired abroad traced in their students career	% graduates with credits acquired abroad traced in their students career on the total
2013	Study Programme	7	0	0,0%
	Average of similar Study Programmes	31,5	2,1	6,6%
2014	Study Programme	11	0	0,0%
	Average of similar Study Programmes	32	2,3	7,1%
2015	Study Programme	11	0	0,0%
	Average of similar Study Programmes	34,4	2,8	8,1%

*"Total number of graduates", for each year, refers to graduates whether they graduated in the current programme or in the Study programme running under previous reform regulations.

D.3. OPINIONS OF GRADUATES AND ATTENDING STUDENTS

The tables and the graphs provide information on the number of graduates who expressed positive opinions on the Study Programme, and a focus on opinions expressed by attending students on the 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**”.

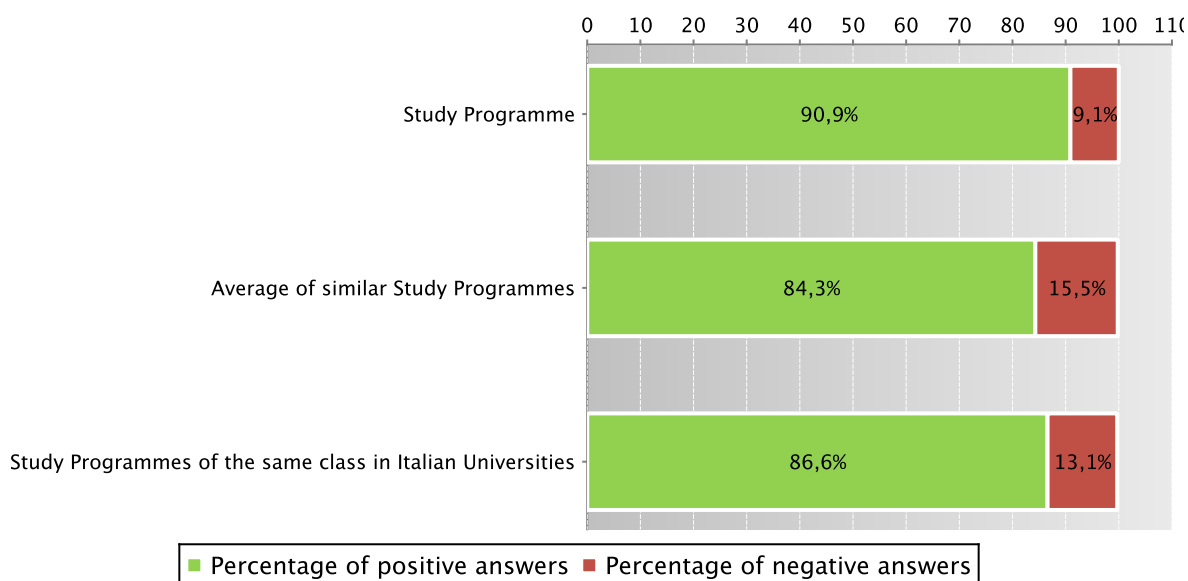
In addition, the **table** shows the percentage of students who answered “Yes, to the same programme in the same university” to the question “Would you register again to the university?”.

When the Study Programme data is not available for three academic years reformed ex DM 270/04, for the less recent years, for some information the data of the previous Study Programme are available, too.

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 2015 who responded positively to the question: “Are you generally satisfied with this Study Programme?”

Data of the Study Programme D.M. 270/04 Animal Biotechnology (code 8522)



Data of the Study Programme D.M. 270/04 Animal Biotechnology (code 8522)

		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?"
2013	Study Programme	7	7	71,4%	71,4%
	Average of similar Study Programmes	31,2	29,6	84,7%	72,3%
	Study Programmes of the same class in Italian Universities	921	852	85,8%	71,8%
2014	Study Programme	11	11	100,0%	90,9%
	Average of similar Study Programmes	32	30,2	85,4%	73,5%
	Study Programmes of the same class in Italian Universities	899	835	84,6%	69,7%
2015	Study Programme	11	11	90,9%	81,8%
	Average of similar Study Programmes	34,4	33,2	84,3%	69,7%
	Study Programmes of the same class in Italian Universities	1271	1137	86,6%	69,7%

Note: The opinions of the Study Programmes with less than 5 graduates are not shown.

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

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 the academic year 2014/2015.

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

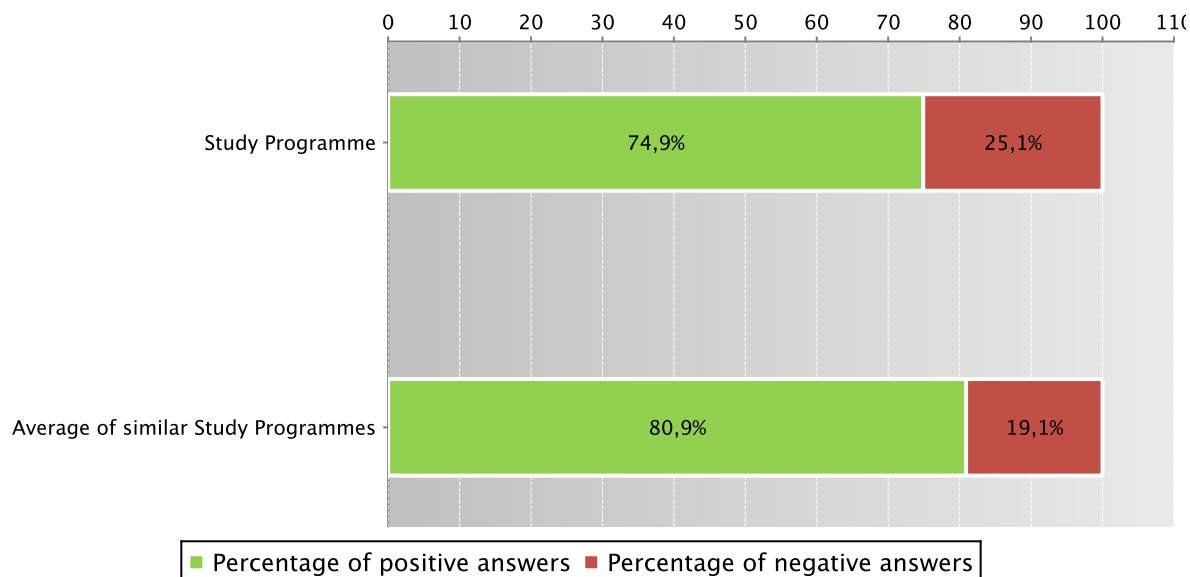
The Study Programme data is compared with the [average of similar Study Programmes \(which belong to the same group\)](#), for the indicated academic years.

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

The survey and subsequently analysis of the opinions of students attending the course is cared for the University of Bologna by Academic Affairs Division - Quality Assurance and Control and Finance Division - Support Planning and Evaluation Department. The overall results are available on the following [link](#).

Students who responded positively to the question: “Are you generally satisfied with this course unit?” in academic year 2014/2015

Data of the Study Programmes D.M. 270/04 School of Animal Biotechnology (code 8207), Animal Biotechnology (code 8522) and of the Study Programme D.M. 509/99 Animal Biotechnologies (code 0459)



Data of the Study Programmes D.M. 270/04 School of Animal Biotechnology (code 8207), Animal Biotechnology (code 8522) and of the Study Programme D.M. 509/99 Animal Biotechnologies (code 0459)

		N. of completed questionnaires	% of positive answers concerning the workload required by the course unit - Question 2	% of positive answers concerning the teachers adherence to the timetable of course unit - Question 5	% of positive answers concerning the consistence with what stated on the web site – Question 9	% of positive answers concerning the teacher's availability to clarify topics and offer explanations – Question 10	% of positive answers concerning the general satisfaction with the course unit - Question 12	% of positive answers concerning the delivering by the official teacher of the course unit – Question 13
a.y. 2012/2013	Study Programme	136	94,9%	95,6%		100,0%	91,9%	100,0%
	Average of similar Study Programmes	381,4	77,9%	93,5%		95,7%	78,4%	94,5%
a.y. 2013/2014	Study Programme	234	90,1%	94,4%	97,8%	98,7%	84,1%	99,1%
	Average of similar Study Programmes	468,5	80,5%	95,0%	94,5%	96,4%	78,7%	95,6%
a.y. 2014/2015	Study Programme	319	78,0%	91,5%	96,8%	93,1%	74,9%	99,1%
	Average of similar Study Programmes	513,3	80,9%	95,0%	95,3%	96,6%	80,9%	98,0%

Note: For completeness is reported the full texts of the query of the questionnaire in tab: number 2 “Is the workload required by this course unit proportionate to the number of university credits?”, number 5 “Has the teacher adhered to the lesson timetable?”, number 9 “Was the delivery of the course unit consistent with what stated on the degree programme website?”, number 10 “Is the teacher available to clarify topics and offer explanations?”, number 12 “On the whole, are you satisfied with the way this course has been taught?”, and number 13 “Have all the lessons been delivered by the official teacher of this course unit?”.

Further information on [opinion of attending students available in the site with the overall survey results.](#)

D.4. ENTRY INTO THE WORLD OF WORK

Employment situation of graduates of the Study Programme. The tables and the graphs provide information on the employment situation of graduates one year after graduating. Furthermore provide the percentage of graduates who have obtained credits for the activity of curriculum internship during their students career.

D.4.1. EMPLOYMENT SITUATION

Employment situation of graduates one year after graduating.

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

The **graph** shows who working; who not working and is enrolled in a 2nd Cycle Study Programme; not working, and not seeking employment; not working, and seeking employment.

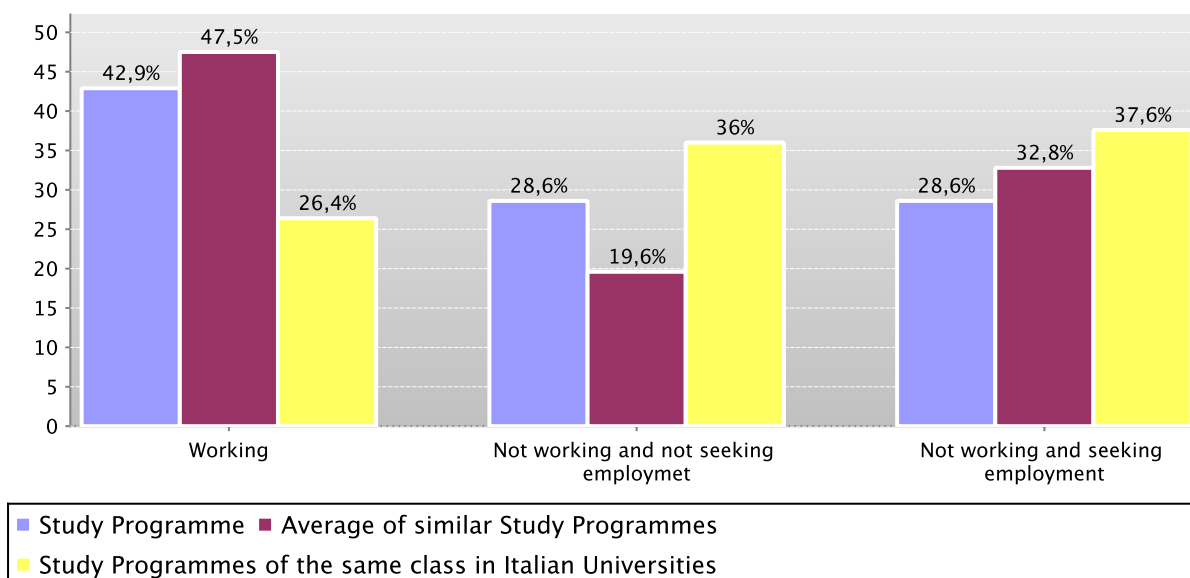
In addition, the **table** shows the number of interviewed, the percentage of who is following a university programme or traineeship and the appropriateness of their degree to the job.

The data refers to graduates who attended the study programme ex DM 270/04. When Study Programme data are not available for three academic years, for some information the data of the previous Study Programme are available too.

The Study Programme data is compared with the [average of similar Study Programmes](#) (which belong to the same group), and the average of the Study Programmes of the same class in the Italian Universities for the graduates of the indicated calendar years.

Employment situation of graduates in 2014 one year after graduating

Data of the Study Programme D.M. 270/04 Animal Biotechnology (code 8522)



Data of the Study Programmes D.M. 270/04 School of Animal Biotechnology (code 8207), Animal Biotechnology (code 8522)

	Study Programme	N. graduates interviewed	Employment situation (1)			Degree's appropriateness for the job (referred to the graduates who just work) (3)		
			Working	Not working and not seeking employment	Not working and seeking employment	Not working, not seeking employment, but following a university programme/traineeship (2)	Effective / very effective	Quite effective
Graduation Year 2012	Study Programme	4	50,0%		50,0%		50,0%	
	Average of similar Study Programmes	20,9	57,8%	20,4%	21,7%	14,1%	44,6%	29,9%
	Study Programmes of the same class in Italian Universities	717	24,5%	38,4%	37,1%	27,1%	45,9%	21,5%
Graduation Year 2013	Study Programme	6	33,3%	33,3%	33,3%	33,3%	50,0%	50,0%
	Average of similar Study Programmes	25,5	52,5%	18,3%	29,2%	11,7%	46,9%	32,5%
	Study Programmes of the same class in Italian Universities	809	29,4%	34,0%	36,6%	24,6%	51,7%	20,9%
Graduation Year 2014	Study Programme	7	42,9%	28,6%	28,6%	14,3%	33,3%	
	Average of similar Study Programmes	25,8	47,5%	19,6%	32,8%	11,6%	53,4%	24,2%
	Study Programmes of the same class in Italian Universities	928	26,4%	36,0%	37,6%	24,7%	47,3%	23,4%

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

Notes to the AlmaLaurea Report of the Employment situation of the graduates

- (1) "Employment and education situation": the share of employed is given by the sum of those who are working and who are working and are enrolled in a 2nd Cycle degree. The share of enrolled in the 2nd Cycle degree is given by the sum of those who working and studying and those who only studying.
- (2) "Share of those who do not working, 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 processing of this data complies with D.M. 544 /2007, as later provided in D.D. no. 61/2008 and most recent D.M. 17, 22 September 2010 and D.M. 50, 23 December 2010 (transparency requirements).
- (3) The evaluation of the effectiveness of the degree is obtained combining the request for the title of study at the work and the level of application of the skills learned at the university.

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

D.4.2. CREDITS OBTAINED BY GRADUATES THROUGH CURRICULUM INTERNSHIP ACTIVITY

The **table** shows the number of graduates, in a certain calendar year, who obtained credits for the activity of curricular internship, during their students career.

The data refers to graduates who attended the current programme. When Study Programme data are not available for three academic years, for some information the data of the previous Study Programme are also available.

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

Data of the Study Programme D.M. 270/04 Animal Biotechnology (code 8522)

		N. graduates	Graduates with credits acquired through internship activity (1)	Graduates with credits recognized as substitution of the internship activity (2)	% graduates with credits acquired through internship activity on the total number
2013	Study Programme	7	7	0	100,0%
	Average of similar Study Programmes	31,5	25,7	0,4	81,8%
2014	Study Programme	11	11	0	100,0%
	Average of similar Study Programmes	32	25,2	0,5	78,8%
2015	Study Programme	11	10	1	90,9%
	Average of similar Study Programmes	34,4	30	0,1	87,2%

Notes:

(1) The data refers to the graduates who have obtained credits in their students career for the activity defined as a trainship / stage / internship.

(2) The data refers to the graduates who have in their students career the activity defined as a trainship / stage / internship obtained as recognition.

The percentage in the last column shows the relation between the "Graduates with credits acquired through internship activity" and the "N. graduates".

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 2013/2015).

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.

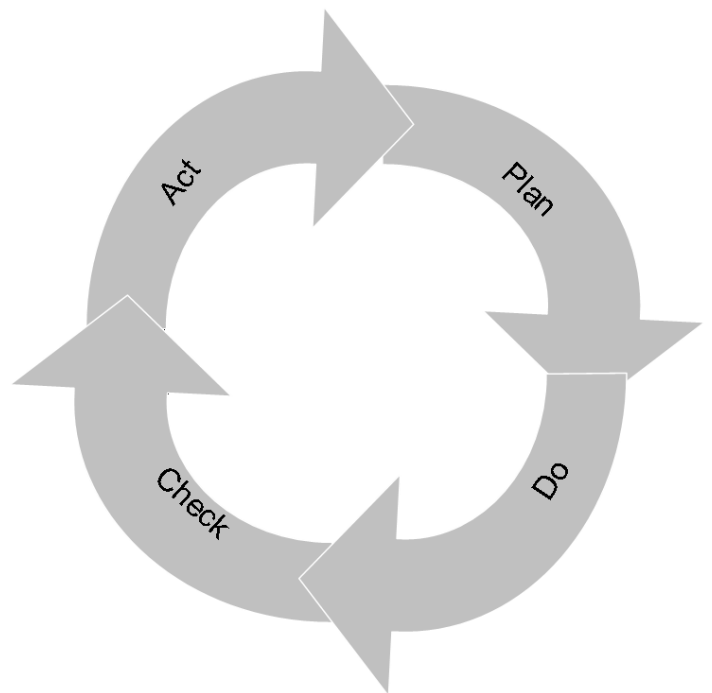
In the Statute and the Strategic Plan 2013/2015 the University of Bologna acknowledges its responsibility in guaranteeing the quality of its study programmes, and for this purpose adopts an "internal quality assurance system".

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	x	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	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>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 evaluated are published every year on the Report of the Study Program.</p>	Academic Bodies
<p>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.</p>	Schools and Study Programmes
<p>Internal audit</p>	
<p>The results of the self-assessment process are reviewed in the following phases:</p> <ul style="list-style-type: none"> • Analysis: the University "Presidio di Qualità" 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. 	<p>Presidio della Qualità Vice Rector for Teaching and Education Academic Bodies</p>
<ul style="list-style-type: none"> • 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 online database service of graduates' curriculum vitae (2,280,000 CVs, from 73 Italian universities as of 24/02/2016), 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 University of Bologna study programmes of the same cycle which belong to the subject group.

The University of Bologna has divided its Study Programmes into 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

Group of students beginning their students career on the same academic year. Students which have been transferred or which enrolled to pass to another Study Programme, or enrolled to a second degree are not included.

From the publication of this study programme report is updated the procedure of the selection of the cohorts: the student belongs to the cohort of the study programme on which one has been enrolled on 31 December of the year of the beginning of student career.

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).

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.

Repeating

Student 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.

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 from studies

Suspension of studies by students who do not enroll in the next academic year or who drop out from the studies.