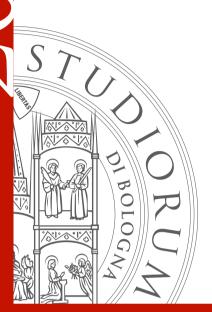


ALMA MATER STUDIORUM Università di Bologna



School of Engineering and Architecture LAUREA MAGISTRALE (SECOND CYCLE DEGREE/TWO YEAR MASTER - 120 ECTS) IN ENGINEERING MANAGEMENT A.Y. 2013/2014 Programme Director Prof. Alessandro Grandi

# REPORT

Study Programme Report Engineering Management Programme ex D.M. 270/04 - Code 0936 - Class LM-31 School of Engineering and Architecture Programme Director Prof. Alessandro Grandi

Created in collaboration with Teaching and Learning Administrative Area (AFORM - Area della Formazione) - Quality Assurance Unit

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# WHAT IS THE STUDY PROGRAMME REPORT?

#### What is the Study Programme Report?

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

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

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

For example, regarding the current issue of employment, it describes the learning outcomes and career opportunities; it also includes statistics on the percentage of employed graduates (D.4. Employment situation). The document is organised into five sections and a glossary:

A. Presentation and prospects

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

#### B. Teaching and Learning

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

#### C. Resources and services

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

#### D. The Study Programme in Figures

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

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

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

#### NOTES:

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

# A. PRESENTATION AND PROSPECTS

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

#### A.1. PRESENTATION

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

The 2nd cycle degree programme in Management Engineering specifically aims to produce professional figures who are able to cover management roles with high levels of organisational responsibility which demand technological knowledge combines with a solid background in economics and the various aspects of business management.

Graduates in Management Engineering have in-depth knowledge of the specific subjects of this class, particularly in the fields of processing technologies and systems, industrial systems, business organisation and management, automation systems and processes. The career opportunities for management engineering graduates in particular include roles which require specific skills in managing complex problems characterised by technological constraints and opportunities through the application of advanced economic and management tools and skills, with particular focus on situations in which physical, financial and human resources need to be optimised in highly complex conditions, assuring quality as well as product and process safety, analysing the problems linked to the environmental impact and constraints, examining the opportunity to adopt new technologies assessing the organisational and competitive aspects. The functions management engineering graduates will be able to cover, demonstrating the possession of high level and specific skills compared to other 2nd cycle graduates, concern: the design, management and supervision of technology-based productive and logistics structures in terms of physical and organisational components; the design, management and supervision of operational, administrative, technical and commercial processes and relative information flows. The value of management engineering graduates will be particularly demonstrated in activities with a high technical and economic complexity in contexts which demand innovative approaches. Consequently, the 2nd cycle degree programme in Management Engineering aims to provide in-depth knowledge of business management in the main functional fields of the structure and operations of various types of advanced production and logistics systems, industrial technologies and the relative economic and organisational aspects; modelling and design skills applied to production, logistics, administrative and technical-commercial processes and the identification and measurement of performance, planning and implementation of improvement actions; in-depth knowledge of information and communication technologies applied to business processes.

#### 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:

Graduates will have in-depth knowledge of the methodological and operational aspects of mathematical disciplines, basic sciences, industrial and information technologies and will be able to use this knowledge to interpret and describe even highly complex and innovative technological and organisational problems that are typical to management engineering in both industrial and information fields.

They will have developed the learning skills required to keep abreast of advanced subjects concerning methods, techniques and instruments in the field of management engineering, both in terms of industrial and information technologies applied to management processes, and in economic and organisational terms, as well as to carry out innovative design activities applied to products and processes.

The achievement of the ability to apply the above knowledge and understanding will be accomplished through the learning activities organised in the "Management Engineering" programme, supplementary and complementary activities as well as further activities including work placement and laboratories. The teaching methods include participation in seminars and exercises in the classroom and in the laboratory, individual and group projects, guided self-study and autonomous study. Assessment of the achievement of the described learning outcomes shall be mainly through tests, written and oral exams and project work.

#### ABILITY TO APPLY KNOWLEDGE AND UNDERSTANDING:

2nd cycle graduates:

- will use their knowledge and skills to demonstrate a professional approach to work, and will possess advanced skills in the management engineering field for reasoning and solving specific problems in the manufacturing and tertiary sectors and in a freelance environment;

- will know the structural and operational management of production and logistics systems in terms of technological, organisational and economic components, and will have developed systems analysis and innovative development skills;

- will have developed knowledge and specific skills to identify and use appropriate analysis tools of an economic and organisational nature applied to highly complex specific technological problems and contexts, with particular focus on cases which require innovative solutions for the integration and optimisation of management of technical, financial and human resources;

- will be able to critically use appropriate methodologies for establishing the performance of technological systems to support the main management processes and to develop innovative solutions;

- will be able to identify and implement research, development and engineering programmes for innovative products or services and the relative technological and organisational processes.

The achievement of the ability to apply the above knowledge and understanding will be accomplished through the learning activities organised in the "Management Engineering" programme, supplementary and complementary activities as well as further activities including work placement and laboratories.

The teaching methods include participation in seminars and exercises in the classroom and in the laboratory, individual and group projects, guided self-study and autonomous study. Assessment of the achievement of the described learning outcomes shall be mainly through tests, written and oral exams and project work.

#### JUDGEMENT SKILLS:

2nd cycle graduates:

- will be able to identify, formulate and solve problems linked to the management of production, logistics, administrative and technicalcommercial processes;

- will be able to gather, integrate and interpret technical and economic data and information in order to formulate an autonomous opinion on their importance and management implications, and formulate original and innovative solutions;

- will be able to keep abreast of methods, techniques and instruments in the field of management engineering, both in terms of industrial and information technologies applied to management processes, and in economic and organisational terms, comparing them and selecting them according to technical and economic convenience criteria.

The aforementioned judgement skills are accomplished through the learning activities organised in the "Management Engineering" programme, as well as further activities including work placement and laboratories and the preparation for the final examination. The teaching methods include participation in seminars and exercises in the classroom and in the laboratory, individual and group projects, guided self-study and autonomous study. Assessment of the achievement of the described learning outcomes shall be mainly through tests, written and oral exams and project work.

#### COMMUNICATION SKILLS:

Graduates will be able to communicate data, information, ideas, problems and solutions of a technical and economic nature effectively in writing and orally also in English (B2 level) to both specialist and non-specialist interlocutors.

They will be able to cover roles with organisational and management responsibilities.

The aforementioned communication skills are accomplished through the participation in core and supplementary learning activities as well as further activities including work placement and laboratories and the preparation for the final examination. The teaching methods include participation in exercises in the classroom and in the laboratory, individual and group projects and guided self-study. Assessment of the achievement of the described learning outcomes shall be mainly through written and oral exams and project work.

#### LEARNING SKILLS:

2nd cycle graduates will develop learning skills to such a high level that they will be able to autonomously keep abreast of the methods, techniques and instruments in the Management Engineering field, marked by a high level of complexity and innovative problems relative to various professional fields of management engineering, in particular in the field of materials procurement and management, organisation and management of production, organisation and automation of production systems and logistics, analysis of business processes, management and technical-commercial monitoring, as well as continuing studies to a high level of autonomy (e.g. 2nd level Master's degree) and/or in the field of research or other academic activities.

The aforementioned learning skills are achieved through learning activities in the disciplinary fields laid down in the degree programme system and in particular the activities carried out partly in an autonomous manner. The specific teaching methodologies include tutorials. Assessment of the achievement of the learning skills shall be through the various exams organised throughout the programme.

#### A.4. CAREER OPPORTUNITIES

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

Professional figure: MANAGEMENT ENGINEER Main functions: - Responsibilities in the management and supervision of complex technology-based production and/or logistics structures, with the coordination of technical and organisational components.

- Responsibilities for the management and supervision of materials, components and systems procurement structures.

- Responsibilities for the management and supervision of cost analysis, economic planning and monitoring and investment analysis.

- Responsibilities for the management and supervision of company quality assurance departments and relative certification processes.

- Responsibilities for the management and supervision of technological design departments in the industrial and services field.

- Responsibilities for the management and supervision of analysis, design and maintenance activities concerning organisational and information systems to support company management processes.

- Responsibilities for the management and supervision of marketing and sales departments for industrial products with high technical contents.

- Freelance management consultant serving industrial and services companies and the public administration.

Career opportunities:

The main career opportunities lie in the manufacturing, industrial transformation and services industries, both conventional (transport, distribution and territorial management, etc.) and advanced with high added value (management consulting, IT, telecommunications, etc.) and the whole of the civil service.

Generally speaking, the activities concern the procurement and management of materials, company organisation of production and logistics, organisation, management and automation of management processes and information flows, project management and management control, analysis of the industrial sector and assessment of investments. The value of management engineering graduates will be particularly demonstrated in activities with a high technical and economic complexity in contexts which demand innovative approaches.

In particular, Management Engineering graduates will work in the field of procurement and management of materials, organisation and management of production, organisation and automation of production and logistics systems, analysis of company processes, management and technical-commercial monitoring.

Referring to the ISTAT categories of professional classifications, the most direct, although partial, reference can be found in point 2.2.1.9.2 – Industrial and Management Engineers, which defines a professional sector which includes profiles who "carry out research or apply existing knowledge to the design, development and assessment of integrated management systems applied to the management of industrial production processes, including human labour, quality control, industrial logistics, cost analyses and production coordination. They supervise and manage these activities." Equally important are the definitions given in points 1.2 – Entrepreneurs, administrators and directors of large private companies and 1.3 – Entrepreneurs, managers and directors of small companies with responsibility for the implementation of projects, definition of organisational methods, coordination of required resources, monitoring of all activities compared to the set objectives, responsibility for management and expenditure. A further useful reference can be found in point 1.1.2.4.1 – General Directors, heads of departments and similar in state administrations, local autonomous boards, non-economic public authorities and local authorities.

#### 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 thirdcycle studies (PhD/Specialisation schools) and to professional master'sprogrammes.

# **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 (in Italian). Information updated to 28 May 2013 (in Italian).

#### Permanent teaching staff:

| Barbieri, Paolo    | Grandi, Fabio         |
|--------------------|-----------------------|
| Bonoli, Alessandra | Grimaldi, Rosa        |
| Campana, Giampaolo | Macchelli, Alessandro |
| Cozzani, Valerio   | Malaguti, Enrico      |
| Ferrari, Emilio    | Mora, Cristina        |
| Grandi, Alessandro | Negrini, Francesco    |

#### Contract teaching staff:

Arfé, Antonio Bellucci, Arturo Bugamelli, Fabrizio Gamberi, Mauro Ghini, Massimiliano Marini, Mauro Melino, Francesco Pitilino, Claudio Squatrito, Rosario

- Peretto, Lorenzo Regattieri, Alberto Rinaldi, Paola Rizzi, Stefano Romagnoli, Alessandro Santarelli, Francesco
- Sobrero, Maurizio Tagliaventi, Maria Rita Tomesani, Luca Toth, Paolo Tugnoli, Alessandro Verdone, Roberto

#### 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 which provides specific information about the offices and the services for the enrolled students (in italian).

• Enrolled 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.

• International 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 (SP) and a comparison with similar Study Programmes. The University of Bologna has divided its Study Programmes into four groups:

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

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

Main data shows how many students enrolled, the number of students assigned OEA, how many drop out after the first year, how many graduate in line with the programme schedule, the opinions of attending and graduating students on the teaching programmes and information concerning graduate employment. The information and data presented in this section, updated to 28 May 2013, were taken from University databases and AlmaLaurea.

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

Most of the Study Programmes running at the University of Bologna have been reformed in compliance with DM 270/04, most of them from the academic year 2008/2009. For this reason for the previous academic years for some information, as opinion of the graduates and employment situation, are provided in the reports of those Programmes, on the paragraph D.5. refers to the Study Programmes as they were presented prior to the reform.

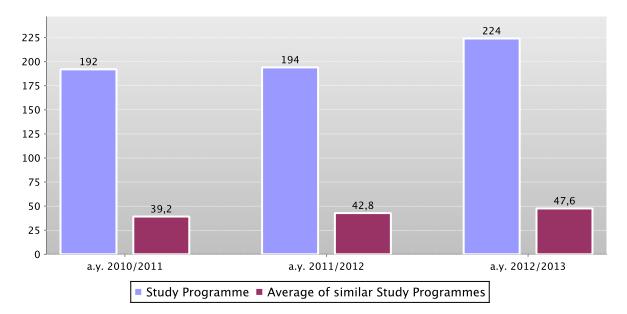
#### D.1. STUDENTS STARTING THEIR UNIVERSITY CAREERS

Characteristics of incoming students at the beginning of their study. Tables and graphs provide information on number of enrolled students (new careers), focusing on the characteristics of students and results of any entrance tests.

#### D.1.1. ENROLMENTS

The **graph** and the **table** show the number of new careers of the Study Programme compared with the average of similar Study Programmes (which belong to the same group), for the indicated academic years.

New careers



|   | a.y. 201    | 0/2011                     | a.y. 201    | 1/2012                     | a.y. 2012/2013 |                            |  |
|---|-------------|----------------------------|-------------|----------------------------|----------------|----------------------------|--|
|   | New careers | Total N. enrolled students | New careers | Total N. enrolled students | New careers    | Total N. enrolled students |  |
| Study<br>Programme                        | 192         | 381                        | 194         | 462                        | 224            | 475                        |  |
| Average of<br>similar Study<br>Programmes | 39,2        | 60,4                       | 42,8        | 62,9                       | 47,6           | 62,6                       |  |

#### 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 1st cycle degree, age and gender of students.

The 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 1st cycle degree of students enrolling in the degree programme.

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

|                       |   |             | Geographic origin  |  |   |   |                             | Gender |       | Average age of new career students |         |            |
|-----------------------|---|-------------|--|--|---|---|-----------------------------|--------|-------|------------------------------------|---------|------------|
|                       |   | New careers | Students coming from the province of<br>the Study Programme site | Students coming from other provinces<br>where Unibo has a site | Students coming from other provinces of Emilia Romagna region | Students coming from other Italian<br>regions | Students coming from abroad | М      | F     | 22 of less                         | 23 - 24 | 25 or more |
|                       | Study Programme                           | 192         | 28,6%  | 10,9%  | 6,3%  | 52,6%   | 1,6%                        | 59,9%  | 40,1% | 47,9%                              | 42,7%   | 9,4%       |
| Students 2010/2011    | Average of<br>similar Study<br>Programmes | 39,2        | 26,0%  | 19,0%  | 8,2%  | 42,6%   | 4,3%                        | 70,2%  | 29,8% | 36,7%                              | 42,3%   | 21,0%      |
|                       | Study Programme                           | 194         | 21,6%  | 14,9%  | 5,2%  | 56,7%   | 1,5%                        | 59,3%  | 40,7% | 45,9%                              | 39,7%   | 14,4%      |
| Students<br>2011/2012 | Average of<br>similar Study<br>Programmes | 42,8        | 25,6%  | 18,3%  | 8,1%  | 44,8%   | 3,2%                        | 66,3%  | 33,7% | 31,2%                              | 46,7%   | 22,2%      |
|                       | Study Programme                           | 224         | 27,2%  | 11,6%  | 8,0%  | 52,2%   | 0,9%                        | 58,9%  | 41,1% | 42,0%                              | 42,4%   | 15,6%      |
| Students<br>2012/2013 | Average of<br>similar Study<br>Programmes | 47,6        | 27,9%  | 18,2%  | 6,2%  | 43,2%   | 4,6%                        | 68,2%  | 31,8% | 32,0%                              | 44,7%   | 23,3%      |

|                       |   | First Cycle Degree:<br>University of previous studies |                            |                    | First Cycle De<br>more frequent | First Cycle Degree: grade     |               |   |   |  |   |   |  |
|-----------------------|---|---|----------------------------|--------------------|---------------------------------|-------------------------------|---------------|---|---|--|---|---|--|
|                       |   | University of Bologna                                 | Other Italian Universities | Foreign University | Other not defined               | Class code and name           | % of students | First Cycle Degree grade between 66<br>and 90 | First Cycle Degree grade between 91 and 100 | First Cycle Degree grade between 101 and 105 | First Cycle Degree grade between 106<br>and 110 | First Cycle Degree grade 110 and honors | First Cycle Degree grade not available |
|                       | Study Programme                           | 75,5%   | 24,0%                      |                    | 0,5%                            | 10 INGEGNERIA<br>INDUSTRIALE  | 75,0%         | 30,7%   | 38,0%                                       | 17,7%  | 9,9%  | 3,1%                                    | 0,5%                                   |
| Students<br>2010/2011 | Average of<br>similar Study<br>Programmes | 75,1%   | 17,9%                      | 0,6%               | 6,4%                            | 10 INGEGNERIA<br>INDUSTRIALE  | 25,3%         | 16,3%   | 31,8%                                       | 16,8%  | 14,2%   | 14,5%                                   | 6,4%                                   |
|                       | Study Programme                           | 72,7%   | 25,8%                      |                    | 1,5%                            | L-9 INGEGNERIA<br>INDUSTRIALE | 49,0%         | 30,4%   | 36,1%                                       | 13,9%  | 12,9%   | 5,2%                                    | 1,5%                                   |
| Students<br>2011/2012 | Average of<br>similar Study<br>Programmes | 71,3%   | 21,4%                      | 0,4%               | 6,9%                            | 10 INGEGNERIA<br>INDUSTRIALE  | 15,9%         | 15,3%   | 34,0%                                       | 17,7%  | 13,6%   | 12,5%                                   | 6,8%                                   |
|                       | Study Programme                           | 72,3%   | 27,2%                      |                    | 0,4%                            | L-9 INGEGNERIA<br>INDUSTRIALE | 65,6%         | 33,9%   | 44,2%                                       | 14,3%  | 2,7%  | 4,5%                                    | 0,4%                                   |
| Students<br>2012/2013 | Average of<br>similar Study<br>Programmes | 67,6%   | 15,8%                      | 0,4%               | 16,3%                           | L-9 INGEGNERIA<br>INDUSTRIALE | 21,0%         | 16,4%   | 33,9%                                       | 12,8%  | 11,1%   | 9,5%                                    | 16,3%                                  |

#### D.2. REGULARITY OF STUDIES

Insight into the regularity with which the students pass their exams. The graphs and the tables provide information on the number of students who leave 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 exams passed and average grade achieved for each course unit.

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

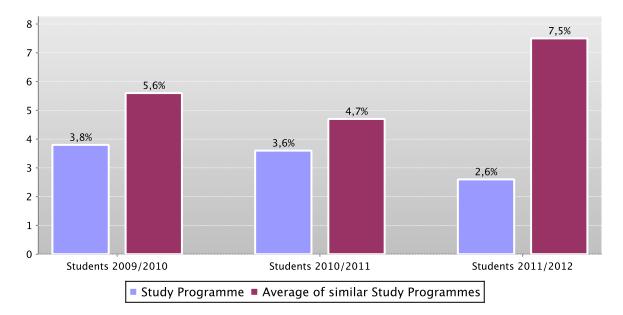
Here the number of students leaving the Study Programme is shown.

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 (new careers), 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 (which belong to the same group), for students registered (new careers) in the indicated academic years.

Percentage of withdrawals between years 1 and 2



|                       |   | New careers | % withdrawals | % passages and transfers | % repeating students | Students enrolled in the second year |
|-----------------------|---|-------------|---------------|--------------------------|----------------------|--------------------------------------|
|                       | Study Programme                           | 185         | 3,8%          | 1,1%                     | 0,0%                 | 176                                  |
| Students<br>2009/2010 | Average of<br>similar Study<br>Programmes | 40,5        | 5,6%          | 0,8%                     | 0,1%                 | 37,9                                 |
|                       | Study Programme                           | 192         | 3,6%          | 0,0%                     | 0,0%                 | 185                                  |
| Students<br>2010/2011 | Average of<br>similar Study<br>Programmes | 39,2        | 4,7%          | 0,7%                     | 0,0%                 | 37,1                                 |
|                       | Study Programme                           | 194         | 2,6%          | 1,0%                     | 0,0%                 | 187                                  |
| Students<br>2011/2012 | Average of<br>similar Study<br>Programmes | 42,8        | 7,5%          | 1,3%                     | 0,1%                 | 39                                   |

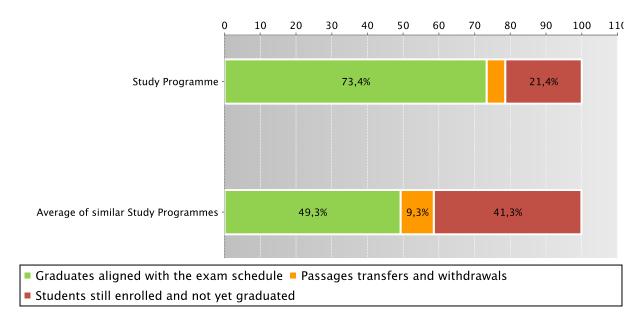
#### **D.2.2. REGULAR GRADUATES**

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 the registered students (new careers) 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 enrolled in the indicated accademic year.

Situation of students 2010/2011 at the end of regular duration of the study programme



|                       |   | New<br>careers | Regular graduates |       | s Passages transfers<br>and withdrawals |       | Students still<br>enrolled and not<br>yet graduated |       |
|-----------------------|---|----------------|-------------------|-------|---|-------|---|-------|
|                       |   |                | N.                | %     | N.                                      | %     | N.  | %     |
|                       | Study Programme                           | 185            | 104               | 56,2% | 11                                      | 5,9%  | 70  | 37,8% |
| Students<br>2009/2010 | Average of<br>similar Study<br>Programmes | 40,5           | 17                | 42,0% | 4,3                                     | 10,7% | 19,1  | 47,2% |
|                       | Study Programme                           | 192            | 141               | 73,4% | 10                                      | 5,2%  | 41  | 21,4% |
| Students<br>2010/2011 | Average of<br>similar Study<br>Programmes | 39,2           | 19,3              | 49,3% | 3,7                                     | 9,3%  | 16,2  | 41,3% |

See data of previous academic years - Study Programme D.M. 509/99 Engineering Management (code 0453) paragraph D.5.2.2.

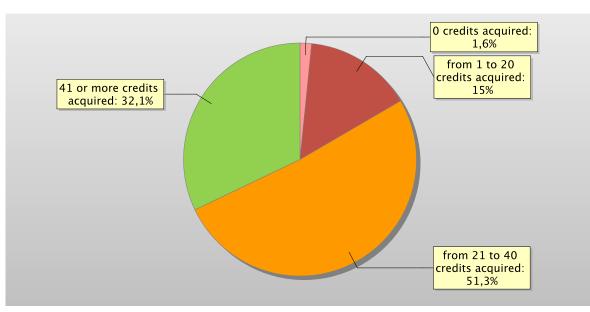
#### D.2.3. ADDITIONAL DATA ON REGULARITY OF STUDIES

#### 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 (wich belong to the same group), for students registered in 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\*



|                       | ſ   |                                   | <u> </u>           |                               |                                |                             | 1                           |
|-----------------------|---|-----------------------------------|--------------------|-------------------------------|--------------------------------|-----------------------------|-----------------------------|
|                       |   |                                   |                    | % studer                      | nts with *                     |                             |                             |
|                       |   | Students enrolled in the 2nd year | 0 credits acquired | from 1 to 20 credits acquired | from 21 to 40 credits acquired | 41 or more credits acquired | Average credits per student |
|                       | Study Programme                           | 176                               | 3,4%               | 25,6%                         | 49,4%                          | 21,6%                       | 28,7                        |
| Students<br>2009/2010 | Average of<br>similar Study<br>Programmes | 37,9                              | 8,1%               | 22,8%                         | 42,5%                          | 26,7%                       | 29                          |
|                       | Study Programme                           | 185                               | 2,7%               | 10,3%                         | 55,7%                          | 31,4%                       | 33,9                        |
| Students<br>2010/2011 | Average of<br>similar Study<br>Programmes | 37,1                              | 6,8%               | 17,0%                         | 45,8%                          | 30,4%                       | 31,2                        |
|                       | Study Programme                           | 187                               | 1,6%               | 15,0%                         | 51,3%                          | 32,1%                       | 33,8                        |
| Students<br>2011/2012 | Average of<br>similar Study<br>Programmes | 39                                | 3,1%               | 16,3%                         | 45,0%                          | 35,6%                       | 33,9                        |

\*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 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 subgroups, 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. The data concerning previous programmes is given in a separate section.

Data of the Study Programme D.M. 270/04 Ingegneria gestionale (code 0936)

|  | N. of exams passed | Average grade * |
|--|--------------------|-----------------|
| 28666 LABORATORIO DI CREAZIONE D'IMPRESA T-A                               | 1                  |                 |
| 28674 ECONOMIA, MERCATI E SETTORI PRODUTTIVI T-AB                          | 3                  |                 |
| 33948 VALORIZZAZIONE DELLE RISORSE PRIMARIE E<br>SECONDARIE M              | 185                | 29,5            |
| 33964 IMPATTO AMBIENTALE DEI SISTEMI ENERGETICI M                          | 12                 | 29,2            |
| 33978 PROCESSI E METODI DI FABBRICAZIONE PER LO<br>SVILUPPO DEL PRODOTTO M | 28                 | 29              |
| 33981 SISTEMI INTEGRATI DI LAVORAZIONE M                                   | 256                | 27              |
| 34393 SERVIZI GENERALI E SICUREZZA D'IMPIANTO M C.I.                       | 215                | 25,1            |
| 34431 SISTEMI DI PRODUZIONE AVANZATI M                                     | 170                | 26,3            |
| 34433 ORGANIZZAZIONE AZIENDALE M C.I.                                      | 183                | 24,9            |
| 34435 ORGANIZZAZIONE E GESTIONE DELLE RISORSE<br>UMANE M                   | 1                  |                 |

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|   | N. of exams passed | Average grade * |
|---|--------------------|-----------------|
| 34437 AUTOMAZIONE DEI PROCESSI INDUSTRIALI M                                | 184                | 26,3            |
| 34439 STRATEGIA AZIENDALE M C.I.  | 187                | 27,2            |
| 34440 STRATEGIA E GESTIONE DEL SISTEMA DEL VALORE M                         | 1                  |                 |
| 34466 FINANZA AZIENDALE E DI PROGETTO M                                     | 38                 | 26,6            |
| 34467 IMPRENDITORIALITÀ E NUOVE IMPRESE NEI SETTORI<br>AD ALTA TECNOLOGIA M | 23                 | 27,7            |
| 34468 MANUTENZIONE DEI SISTEMI DI PRODUZIONE M                              | 105                | 26,4            |
| 34469 MARKETING INDUSTRIALE M   | 122                | 26,8            |
| 34470 METODI PER LA GESTIONE DEI PROGETTI COMPLESSI<br>M                    | 185                | 29,4            |
| 34471 MODELLI E METODI PER IL SUPPORTO ALLE DECISIONI<br>M                  | 34                 | 26,7            |
| 34479 ECOLOGIA INDUSTRIALE M  | 4                  |                 |
| 34491 SISTEMI DI COMUNICAZIONI MULTIMEDIALI M                               | 7                  | 24              |
| 34492 SISTEMI INFORMATIVI AVANZATI M  | 11                 | 29,5            |
| 34493 OTTIMIZZAZIONE DELLE RISORSE M  | 15                 | 28,2            |
| 34506 TECNOLOGIE WEB E DI INTERNET T-AB                                     | 29                 | 29,2            |
| 35192 RESOURCES OPTIMIZATION M  | 2                  |                 |
| 37443 CAMBIAMENTO ORGANIZZATIVO E PROGETTAZIONE<br>DEI PROCESSI AZIENDALI M | 27                 | 28,3            |
| 37444 ELETTROTECNICA DEI SISTEMI ENERGETICI M                               | 143                | 28,5            |
| 37445 AFFIDABILITÀ, CONTROLLO E GESTIONE DELLA<br>QUALITÀ T-AB C.I.         | 38                 | 28,3            |
| 37446 AFFIDABILITÀ E CONTROLLO DELLA QUALITÀ T-A                            | 27                 | 28,5            |
| 37447 MISURE PER LA CONFORMITÀ E L'AFFIDABILITÀ T-A                         | 67                 | 28,4            |
| 65685 RADIO NETWORKS M  | 1                  |                 |

\* 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.

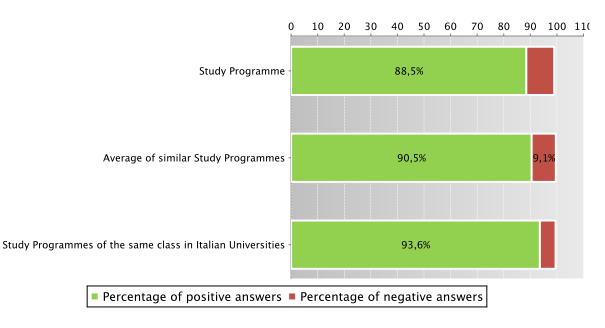
#### **D.3.1. OPINION OF GRADUATES**

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 gestionale (code 0936)* 



Data of the Study Programme D.M. 270/04 Ingegneria gestionale (code 0936)

|      |  | N. graduates | Completed Questionnaires | % of positive answers to the question:<br>"Are you generally satisfied with this<br>Study Programme?" | % of answers "yes to the same<br>Programme in the same University" to<br>the question "Would you register again<br>to the University" |
|------|--|--------------|--------------------------|---|---|
|      | Study Programme  | 31           | 31                       | 93,5%   | 71,0%   |
|      | Average of<br>similar Study<br>Programmes                              | 20           | 19,4                     | 90,0%   | 78,4%   |
| 2011 | Study<br>Programmes<br>of the same<br>class in Italian<br>Universities | 296          | 291                      | 95,2%   | 83,5%   |
|      | Study Programme  | 194          | 191                      | 88,5%   | 77,5%   |
|      | Average of<br>similar Study<br>Programmes                              | 22           | 21,5                     | 90,5%   | 78,6%   |
| 2012 | Study<br>Programmes<br>of the same<br>class in Italian<br>Universities | 973          | 933                      | 93,6%   | 82,6%   |

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 Engineering Management (code 0453) 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.

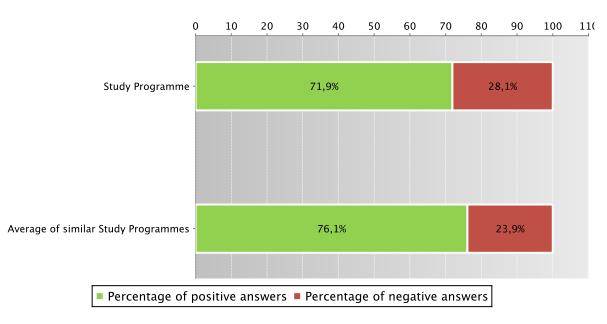
The data concerning the students' opinion refers to the opinions of those attending lessons, whether they are enrolled in the current programme or a Study Programme running under pre-reform regulations (under D.M. 509).

For the University of Bologna the survey and subsequently analysis of the opinions of students attending the course is cared by Aform

- Quality Assurance Department and *Arag* - 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 gestionale (code 0936) and of the Study Programme D.M. 509/99 Ingegneria gestionale (code 0453)



Data of the Study Programme D.M. 270/04 Ingegneria gestionale (code 0936) and of the Study Programme D.M. 509/99 Ingegneria gestionale (code 0453)

|                |   | Number of completed questionnaires | % of positive answers concerning the general satisfaction with the course unit – Question 19 |
|----------------|---|------------------------------------|--|
|                | Study Programme                           | 1441                               | 74,9%  |
| a.y. 2009/2010 | Average of<br>similar Study<br>Programmes | 386,1                              | 77,1%  |
|                | Study Programme                           | 1289                               | 74,9%  |
| a.y. 2010/2011 | Average of<br>similar Study<br>Programmes | 372,6                              | 77,9%  |
|                | Study Programme                           | 1496                               | 71,9%  |
| a.y. 2011/2012 | Average of<br>similar Study<br>Programmes | 422,1                              | 76,1%  |

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**

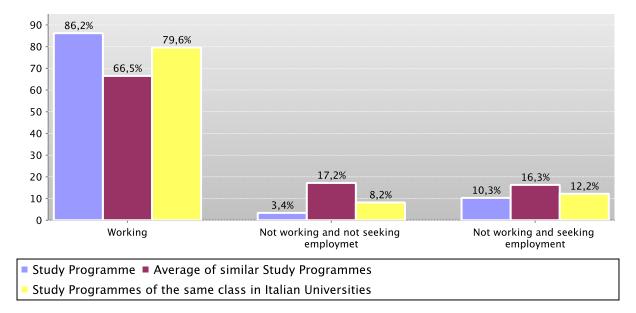
The paragraph shows the employment situation of graduates one year after graduating.

The data is taken from the AlmaLaurea reports on the employment situation of graduates.

The **graph** shows who is working, who is not working 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 class of other Italian universities for the graduates of the indicated years.

Employment situation of graduates in 2011 one year after graduating



|                 |  |                          | Employ  | ment situ:                               | ation (1)                          |  | appropr<br>for th          |                 |
|-----------------|--|--------------------------|---------|--|------------------------------------|--|----------------------------|-----------------|
|                 |  | N. graduates interviewed | Working | Not working and not seeking<br>employmet | Not working and seeking employment | Not working, not seeking<br>employment, but following a<br>university programme/traineship (2) | Effective / very effective | Quite effective |
|                 | Study Programme  | 29                       | 86,2%   | 3,4%                                     | 10,3%                              |  | 50,0%                      | 37,5%           |
| Graduation Year | Average of<br>similar Study<br>Programmes                              | 17,8                     | 66,5%   | 17,2%                                    | 16,3%                              | 12,3%  | 58,1%                      | 30,8%           |
| 2011            | Study<br>Programmes<br>of the same<br>class in Italian<br>Universities | 329                      | 79,6%   | 8,2%                                     | 12,2%                              | 3,0%   | 54,7%                      | 40,6%           |

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 situation": the definition includes the number of employed graduates who declaring to carry out a paid work activity, provided that is not training activity (internship, traineeship, PhD degrees, specialization schools).

(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.

See data of previous academic years - Study Programme D.M. 509/99 Engineering Management (code 0453) 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 study. Tables and graphs provide information on number of enrolled students (new careers), focusing on the characteristics of students.

#### D.5.1.1. ENROLMENTS

Data of enrolments 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, 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

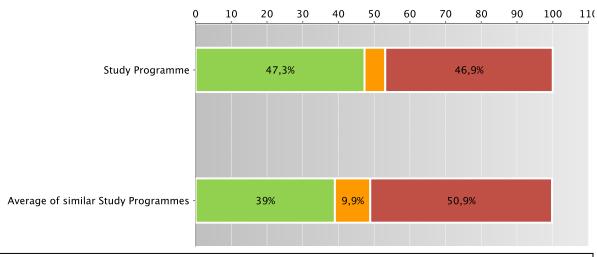
Here you will find information on regular graduates, on how many students, at the end of the regular programme duration, left the programme and how many are still enrolled but not aligned to the exam schedule.

The **graph** and the **table** show the situation concerning the students enrolled at the first year (new careers) 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 2008/2009 at the end of regular duration of the study programme

Data of the Study Programme D.M. 509/99 Engineering Management (code 0453)



Graduates aligned with the exam schedule
Passages transfers and withdrawals
Students still enrolled and not yet graduated

Data of the Study Programme D.M. 509/99 Engineering Management (code 0453)

|                    |   | New<br>careers | Regular graduates |       | Passages transfers<br>and withdrawals |      | Students still<br>enrolled and not<br>yet graduated |       |
|--------------------|---|----------------|-------------------|-------|---------------------------------------|------|---|-------|
|                    |   |                | N.                | %     | N.                                    | %    | N.  | %     |
|                    | Study Programme                           | 224            | 106               | 47,3% | 13                                    | 5,8% | 105   | 46,9% |
| Students 2008/2009 | Average of<br>similar Study<br>Programmes | 42,6           | 16,6              | 39,0% | 4,2                                   | 9,9% | 21,7  | 50,9% |

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.

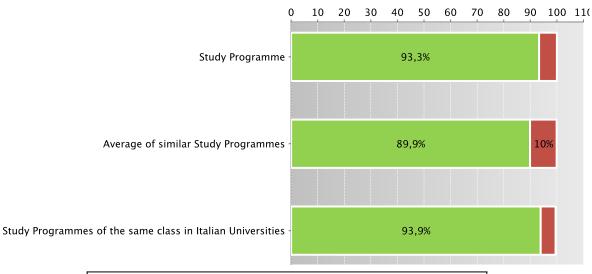
#### **D.5.3.1. OPINION OF GRADUATES**

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 gestionale (code 0453)* 





Data of the Study Programme D.M. 509/99 Ingegneria gestionale (code 0453)

|      |  | N. graduates | Completed Questionnaires | % of positive answers to the question:<br>"Are you generally satisfied with this<br>Study Programme?" | % of answers "yes to the same<br>Programme in the same University" to<br>the question "Would you register again<br>to the University" |
|------|--|--------------|--------------------------|---|---|
|      | Study Programme  | 196          | 193                      | 93,3%   | 77,7%   |
|      | Average of<br>similar Study<br>Programmes                              | 25,5         | 24,8                     | 89,9%   | 78,6%   |
| 2010 | Study<br>Programmes<br>of the same<br>class in Italian<br>Universities | 1255         | 1205                     | 93,9%   | 80,6%   |

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.

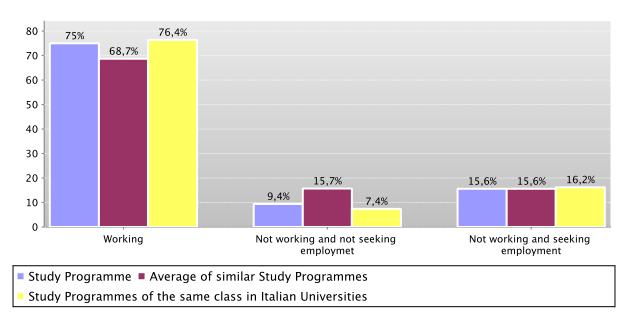
The data is taken from the AlmaLaurea reports on the employment situation of graduates.

The **graph** shows who is working, who is not working 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 class 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 Engineering Management (code 0453)



| Data of the Study | Programme    | DM  | 509/99 | Enginopring  | Management   | (code ()453) |
|-------------------|--------------|---|--------|--------------|--------------|--------------|
| Data of the Staay | 1 rogramme 1 | $\mathcal{D}_{\mathcal{I}}\mathcal{V}\mathcal{I}_{\mathcal{I}}$ | 507777 | Lingineering | ivianagemeni | (1040 07))   |

|                 |  |                          | Employment situation (1) |  |                                    |   | Degree's<br>appropriatene<br>for the job<br>(referred to th<br>graduates wh<br>just work) (3) |                 |
|-----------------|--|--------------------------|--------------------------|--|------------------------------------|---|---|-----------------|
|                 |  | N. graduates interviewed | Working                  | Not working and not seeking<br>employmet | Not working and seeking employment | Not working, not seeking<br>employment, but following a<br>university programme/traineeship (2) | Effective / very effective  | Quite effective |
|                 | Study Programme  | 156                      | 69,2%                    | 7,1%                                     | 23,7%                              | 1,9%  | 49,1%   | 47,2%           |
| Graduation Year | Average of<br>similar Study<br>Programmes                              | 32,1                     | 63,8%                    | 18,3%                                    | 17,9%                              | 11,8%   | 55,3%   | 34,7%           |
| 2009            | Study<br>Programmes<br>of the same<br>class in Italian<br>Universities | 1003                     | 71,2%                    | 8,1%                                     | 20,7%                              | 1,8%  | 51,1%   | 41,7%           |
|                 | Study Programme  | 180                      | 75,0%                    | 9,4%                                     | 15,6%                              | 2,2%  | 49,6%   | 45,9%           |
| Graduation Year | Average of<br>similar Study<br>Programmes                              | 23,5                     | 68,7%                    | 15,7%                                    | 15,6%                              | 9,9%  | 57,4%   | 32,5%           |
| 2010            | Study<br>Programmes<br>of the same<br>class in Italian<br>Universities | 1134                     | 76,4%                    | 7,4%                                     | 16,2%                              | 1,6%  | 48,7%   | 45,7%           |

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 situation": the definition includes the number of employed graduates who declaring to carry out a paid work activity, provided that is not training activity (internship, traineeship, PhD degrees, specialization schools).

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

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

Further information on Graduates' Employment report.

Go back to D.4.1. Employment situation

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

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

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

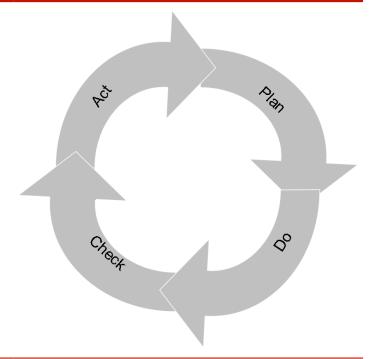
In the Statute and the Strategic Plan 2010-2013 the University of Bologna acknowledges its responsibility in guaranteeing the quality of its study programmes, and for this purpose adopts an "internal quality assurance system".

#### The Internal Quality Assurance system

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

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

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



This path responds to the expectations of students, guides teaching behaviour and provides indicators for the assessment of results. Self-assessment is based on the analysis of significant data (for example, the number of students graduating in line with the exam schedule, students' opinions and the employment rates of graduates) and highlights strengths and weaknesses in order to reflect on the achieved results, critically consider one's own working methods and take steps for the 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<br>Administration           |  |  |  |  |
| Teaching calendar,<br>lessons programme<br>and exam schedules   |               |                 | Х       |             |                                     |  |  |  |  |
| Management of<br>financial resources                            |               |                 | Х       | Χ           |                                     |  |  |  |  |
| Classroom teaching  | Х             |                 |         |             |                                     |  |  |  |  |
| Management of<br>classrooms and<br>laboratories                 |               |                 | Х       | Х           |                                     |  |  |  |  |
| Libraries and study<br>rooms                                    |               |                 | X       | X           |                                     |  |  |  |  |
| Approval of<br>individual study<br>plans                        |               | X               |         |             |                                     |  |  |  |  |
| Communication and information                                   |               | X               | Х       |             | Academic<br>Affairs Division        |  |  |  |  |
| Guidance service  |               | X               | Х       |             | Academic<br>Affairs Division        |  |  |  |  |
| Internships   |               | X               | Х       |             | Academic<br>Affairs Division        |  |  |  |  |
| Administrative<br>services: Student<br>Administration<br>Office |               |                 |         |             | Academic<br>Affairs Division        |  |  |  |  |
| Administration<br>services: Degree<br>programme office          |               |                 | Х       |             | Academic<br>Affairs Division        |  |  |  |  |
| Study grants and<br>loans ad honorem                            |               |                 |         |             | Academic<br>Affairs Division        |  |  |  |  |
| Student mobility:<br>university subsidies<br>and programmes     |               |                 |         |             | International<br>Relations Divisior |  |  |  |  |
| Mobility: study<br>grants for<br>dissertations abroad           |               |                 | Х       |             |                                     |  |  |  |  |
| Mobility:<br>authorisations and<br>recognitions                 |               | X               |         |             |                                     |  |  |  |  |
| Other students<br>support services                              |               | X               | X       |             | Х                                   |  |  |  |  |

• 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

**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.

#### 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.

#### 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.

#### Who does what

Academic Bodies

Schools and Study Programmes

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.