Internationalisation

Region and town

Businesses

1859-2009
150 anni di Cultura Politecnica

POLITECNICO DI TORINO

Politecnico di Torino
EUA-Self Evaluation Report

Research

An innovative research model

POLITECNICO DI TORINO

SELF-EVALUATION REPORT

POLITECNICO DI TORINO

SELF-EVALUATION REPORT

Introduction

Brief analysis of the self-evaluation process:

1. **Who are the self-evaluation group members?**
2. **With whom did they collaborate?**
3. **To what extent was the report discussed across the institution?**
4. **What were the positive aspects, as well as the difficulties, encountered in the self-evaluation process?**

Based on institutional roles and experience acquired in recent years, considering the focus of this self-evaluation and recommendations of the EUA for preparation of the document, the Rector of the Institution selected a group of contributors with a mixed range of competencies as follows:

1. Prof. Romano Borchiellini – Coordinator of the group (Vice Rector for facility management, member of the Board of Directors)
2. Prof. Sergio Rossetto (Coordinator of the committee for organisation of the Senate and Deans
3. Prof. Costanza Roggero (representative of the Department Directors' Committee)
4. Prof. Prof. Giovanni Ghione (representative of the Department Directors' Committee)
5. Prof. Guido Saracco (Coordinator of the Department Directors' committee for incentivation and sustainability)
6. Prof. Marco Filippi (Vice Rector for implementation of reforms)
7. Administrative Director
8. Chiara Basile (Student body representative)

The group was assisted by the administrative offices with regard to preparation of the self-evaluation document.

The group also availed itself of the following high-level consultants:

9. Prof. Muzio Gola (Vice Rector for quality, evaluation and accreditation)
10. Prof. Giorgio Margaritondo (President of the Evaluation Committee)
11. Prof. Enrico Macii (Vice Rector for research, technological transfer and EU relations)

Institutional context

Brief presentation of the institution in its context:

1. Brief historical overview

The *Regio Politecnico di Torino* (Royal Turin Polytechnic) was founded in 1906, but its origins go back further. It was preceded by the *Scuola di Applicazione per gli Ingegneri* (Technical School for Engineers) founded in 1859 after the *Casati* Act and the *Museo Industriale Italiano* (Italian Industry Museum) founded in 1862 under the aegis of the Ministry of Agriculture, Trade and Industry. The Technical School for Engineers was part of the university, which led to technical studies being accepted as part of higher education. The country was about to begin a new industrial era, which the Industry Museum was to address more directly. Famous scholars and researchers, authorities in different subjects with characters to match, gave a decree to new subjects such as

electrotechnics and building science. They were the first to have a vision of founding a school which dealt with the needs of people and society.

Following the model of the most famous European Polytechnic Schools, at the beginning of the 20th Century the *Regio Politecnico di Torino* had various objectives. It began to contact both the European scientific world and local and national industry. Students attending the *Castello del Valentino* and the site in *via Ospedale* had the impression of living in a world that was quickly changing. For the first time, aeronautics was taught as a subject. Students from all over Italy came to Turin and found in the new laboratories, built for the study of everything from chemistry to architecture, a dynamic, resourceful atmosphere. The future was already at hand.

Today, over 150 years later, tradition and innovation continue to distinguish the Institute on the international scene. Graduates of the Politecnico di Torino receive an education that goes well beyond the basic technical knowledge of engineering or architecture. They learn to manage the interdisciplinary nature of the modern scientific world, without overlooking the underlying purpose of it all: man and the society in which he lives. The Politecnico di Torino does not merely communicate knowledge. Students acquire a "critical" method of working that will serve them all their lives and enable them to deal with the abrupt, tumultuous changes in the world of employment, and that will ensure them rapid access to the kinds of professional positions they seek.

2. **Geographical position of the institution (e.g., in a capital city, major regional centre, concentrated on one campus, dispersed across a city)**

The Politecnico di Torino is divided among 5 campuses in the metropolitan area of Turin, as well as a network of technological centres distributed throughout the Region (*Alessandria, Biella, Mondovì, Vercelli, Verrès*), in which a prevalence of research activities is developed, with technological transfer and services devoted to the territory.

In the city, on the banks of the Po River, the Institute has its historical headquarters: the Valentino Castle. It was a Savoy residence in the 17th century and in 1859 it became the Royal School of Application for Engineers. It is now the headquarters of the Architecture department, with an area of 23,000 sq.mt.

The enormous complex – 122,000 sq.mt. – built on *Corso Duca degli Abruzzi*, is almost entirely devoted to Engineering, and was inaugurated in 1958. It is also where the offices of the university Rectorate are located.

The project for expansion of the Politecnico took the form of the *Cittadella Politecnica* (Polytechnic Citadel). Located on a site adjacent to the main headquarters – on *Corso Castelfidardo* – it is part of the global process of urban transformation made possible by the recovery of vast industrial sites. The structure, built on the site of the former Major Repairs Workshop of the State Railway, is now a modern complex, in the style of Anglo-Saxon campuses, but located entirely within the city, with additional spaces for the students (study halls, cafeterias, parks and, in the near future, also sports facilities), research activities, technological transfer and community services. The new campus occupies an area of 170,000 sq.mt. and is considered strategic, not only for teaching and research, but also for the attraction of significant investments by industrial partners. The *Corso Francia* site – devoted to the aerospace sector and industrial design – and the *Lingotto* site – for the automotive sector – complete the metropolitan section.

In recent years the Institute has invested in the Polytechnic Citadel, considered a great incubator for training, research, culture, business and services, with research laboratories and training activities, but also activities connected with innovation and knowledge transfer; it is a place in which the academic world and the industrial world work side by side, a place of social and student aggregation and urban requalification. In the coming years, the main construction project of the Politecnico – jointly with the City of Turin – will be the creation of a second *Campus Aperto* (Open Campus) (as part of the riverside district project known as *Asse del Po*) built, with a unique plan that will involve the *Palazzo Torino Esposizioni* (Turin Exposition Palace), Palazzo del Galileo Ferraris (the Galileo Ferraris building) and *Castello del Valentino* (Valentino Castle), to unify the teaching and

SELF-EVALUATION REPORT

research activities of the Architecture Department. The project will requalify an important area of the city, with the "green heart" of the Valentino Park at the centre, and the activities of the Politecnico all around it. Construction of the Design Centre, on a portion of the area of the former *Mirafiori* automobile plant, is also taking shape. The Centre will integrate university training, basic and applied research, permanent education for technical and professional updating and the promotion of cultural activities open to the city. at *Mirafiori*, the Institute plans to build a "*Cittadella dell'Auto*" ("Citadel of the Automobile") that will contribute to the development of the area, and a second Centre, after the Polytechnic Citadel, for the growth of a new economy in the Turin area. Its goal will be to develop training, research and technological transfer in close synergy with the FIAT Group, and also to follow up on the agreement to be initialed shortly with the University of Windsor, to undertake a joint training program for Italian and Canadian studies with internships in the Fiat Group and Chrysler plants.

3. A brief analysis of the current regional and national labour-market situation

Italy, like the rest of the world, is having to deal with a crisis situation that will probably continue for a few more years (the substantial stability of the GDP indicates this) which is having a severe impact on the employment hopes of university graduates.

The latest data available on employment, income and use of the degree go back to a survey made in 2009 by the Interuniversity Consortium *Alma Laurea*, specialized in the analysis of employment opportunities for Italian graduates and in generating contacts between them and the industrial and business world.

This survey reveals that, compared to previous years, all the types of degree examined showed abrupt signs of a reduction in their ability to be absorbed by the job market: among the graduates of the 3-year degree cycle, the level of employment fell by almost 7 percentage points (62% compared with 69% the year before), among graduates with two years' post-graduate specialization the reduction was over 7 points (45.5%, and only a year earlier it was 53%), while among the specialists in the 5-year degree cycle it was over 5 percentage points (37%; the previous employment rate was 43%).

An analysis of the types of work done confirms the increased difficulty that post-reform graduates have had to face in this last year. Job stability at twelve months from graduation, which was not particularly high even previously, is down for all the groups examined, with respect to the previous survey, with the sole exception of graduates of the 5-year degree cycle (for whom job stability, which remained largely unchanged, was 36%): the difference is -3 percentage points for three-year degree holders (stable employment this year is at 36%), and -2 points for their specialized colleagues (corresponding to 26% with stable employment).

Total earning power after one year is just over 1,050 euro net per month: the breakdown is 1,057 for graduates with specialised degree, 1,109 for 3-year graduates and 1,110 for five-year specialized graduates. With respect to the previous survey, nominal retributions are down for all three types of degree considered: the drop varies from 2% for three-year graduates, 3% for five-year graduates, all the way to 5% for graduates with specialised degrees.

Even the effectiveness of the university degree, though high even from the first year after graduation, is down slightly from the previous survey: the degree is at least somewhat effective for 84 specialized degree holders out of 100 (down 3 percentage points from the 2008 survey) and for 85 three-year degree holders out of 100 (- 2%). The maximum effectiveness (98%) is found among 5-year specialized degree holders.

The employment rate is down, according to the latest survey, among both 3- and 5-year degree holders: for the former, the difference is about –5% (the employment rate for the latest generation is 67%), and almost – 3% for the latter (corresponding to 82% employed). The unemployment rate, on the other hand, is up by about 3 points among 3-year degree holders three years after graduation (corresponding to an unemployment rate of 13%), and 2 points for their colleagues interviewed after five years (corresponding to a rate of 8%). Over a longer time range, extending to the last eight years, the number of 3-year degree holders employed has decreased by over 8 percentage points; for 5-year degree holders we can extend the period of observation

to four years and in this case the decrease is over 4 percentage points. Unemployment increased, in the same periods, by 5 points for the former and 3 points for the latter.

It is still clear, however, that employability increases in proportion to the level of education. The graduates are better able to react to the changes in the job market, because they dispose of more adequate cultural and professional instruments. Over the entire range of the working life (up to age 64), a degree brings greater rewards: workers in possession of a university degree have a higher employment rate by over 10 percentage points than those who have a high school diploma (78.5% vs. 67%). Earnings are also higher for the higher educational levels: measured for university graduates in the age range 25-64, earnings are 55% higher than those of high school graduates. Similar earnings differences are reported in Germany (+62%), the UK (+57%) and France (+50%).

Other elements confirm the overall positive reception of university graduates on the job market: stability of employment, that extends to 72% of those employed, five years after graduation (there has actually been a slight increase in the past year and a constant increase in the last four years) and the effectiveness of the degree on the job market, highlighting the use that graduates make of the skills acquired during their studies, as well as the formal and substantial demand of the degree in the hiring process.

The *Almalaurea* Consortium, comparing requests for résumés received from businesses in the first two months of 2010 with those received in the corresponding period of the previous year, found a decrease of 31% in the number of requests for university graduates, involving almost all sectors of study, even those usually at the highest levels of employability (-37% in the economics-statistics group, -9% in engineering).

The *Almalaurea* survey, specifically as regards the Politecnico, indicates that one year after graduation only 11.9% of the graduates stated that they were unemployed and seeking work and that in any case 20% of them had not taken any action in the last month to find work. The average period between graduation and first employment is 2.9 months and the average starting income is Euro 1,119. The situation is undoubtedly more positive than in the rest of the system, and this is related to the types of degrees available (engineering and architecture), but also to the *Politecnico's* reputation in the business world.

4. Number of faculties, research institutes/laboratories, academic and administrative staff and students

The Politecnico di Torino is specialized in the training of Engineers and Architects. It is not a general university and even the fields of study of its academic body are rather concentrated. Nevertheless, both engineering and architecture offer a broad range of culture that is continuously developing and expanding: from space to the environment and territory, from telecommunications and information technology to energy, from mechanics to electronics, from architecture and building construction to restoration and the cultural heritage, as well as chemistry, automation, electrical engineering and industrial design.

The activity is currently performed, in accordance with the terms of the By-Laws, by five Faculties (2 of Architecture and 3 of Engineering[1]), 18 Departments, 6 Centres and one Doctorate School. The Faculties are in charge of organizing teaching activities, while the Departments are responsible for management of research, and the Centres perform a combination of activities and also provide services for the other structures. On January 29, 2011 a new law (240/2010) went into force, however, that requires the universities to revise their internal organisation within six months, with a view to making the Departments responsible for both teaching and research. For this purpose, the Institute has created two committees (one for revision of the By-Laws and the other for revising the organisation) with the goal of reviewing the roles and responsibilities within the term and defining the organisation that will become operational from January 1, 2012.

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[1] Until the academic year 2009/2010 there were 4 Faculties of engineering, but with the rationalisation of faculty, the Faculty located at the Vercelli campus was closed.

POLITECNICO DI TORINO

SELF-EVALUATION REPORT

The educational offering for 2010/2011 was remodeled during the Spring 2010 semester, to satisfy the new directives received from the Ministry and based on the parameters of sustainability and quality of instruction. By its effect, starting in the academic year 2010/2011, engineering students enrolled in the first year of the three-year degree programme will take the same courses, regardless of the degree programme selected at the time of their matriculation; this will ensure that the future engineers all have the same basic training. The second year is then organized by theme areas and the third by the specific focus of the degree course.

The overall educational offering for 2010/2011 consists of 22 three-year (Bachelor's) degree courses, 30 five-year (Master of Science) degree courses, 23 doctorate courses, 18 master's degree courses, 6 specialized training courses and 1 school of specialization. To facilitate the internationalisation and mobility of the students, the Institute offers 16 first and second level programmes entirely in English.

The faculty consists of 873 professors and researchers (42% are researchers, 28% are associate professors and 30% are full professors), as well as 666 post-doctorate fellows, 751 PhD students and other elements connected to the research groups.
The number of foreign professors increased slightly from 2004 to 2008 from 0.81% to 1.15% of the total staff. The number of women on the faculty remains low, although there has been a steady increase in the last several years, from 21.68% in 2004 to 23.25% in 2009.
Thanks above all to the fund-raising activities of the Politecnico, the Institute and its Departments operate on a budget of 330 million Euro annually. In 2009 the research projects undertaken amounted to about 37 million Euro, of which 8.5 million came from international sources.
The academic structure is flanked by the technical and administrative structure: a staff of 876 people enable the organization to function, manage its laboratories and provide services to the users. In addition to the scientific and didactic quality of its faculty and the variety of its educational offering, in the intent of the Politecnico, its attractivity is based on its ability to remain a "lean" institution, attentive to the users, with strong emphasis on automated internal processes and on the transparency of its public reporting.
A few examples of developments made available in recent years include the possibility for the students to take courses on-line, the introduction of on-line services for the management of careers and communications with the student secretariats, the development of an internal catalogue of scientific research that represent a portal of its research, the opening of a on-line call for the recruitment of researchers, and the introduction of economic and financial accounting procedures.
The Politecnico, in general, wants to be a promoter of innovation in the technical and administrative area, experimenting with new solutions and then exporting them to other contexts. One example is the "pilot" accounting project that our Institute agreed to implement with the Interuniversitary Consortium *Cineca*, overcoming the objective initial difficulties linked to the newness of the application, which other universities are now using experimentally, including the largest Italian university of all, *Roma La Sapienza.*

From 2000 to 2009 overall growth in terms of technical and administrative staff was 14.4%. The number of women on the staff, particularly in the typically administrative areas and in the libraries, exceeds that of men, at slightly over 55%, at all levels of the organization ladder, including management. Analysing their résumés, it is interesting to note that the majority of those in possession of a degree (37.04%) are women, while the majority of those in possession of a high school diploma (50%) are men. As the increasing percentage makes evident, the recruitment policies in recent years have favored the entry of young university graduates in both the administrative and technical areas.

29,267 students are currently enrolled at the Politecnico di Torino (academic year 2009/2010), and 26,523 of these are enrolled in courses at the first and second level. Around 30% are women (20% in 1990). There are

POLITECNICO DI TORINO

SELF-EVALUATION REPORT

4,631 (academic year 2010/2011), and 30% are from outside the Piedmont region, including 12% from foreign countries (much higher than the percentage at other Italian universities), indicating the high attractivity of the institution. The percentage of women is much higher in the faculties of architecture (54%) and lower, though increasing, in the faculties of engineering (23% in 2010 – 20% in 2009). Every year there are over 4,500 graduates, and the ratio between graduating students and first-year students reveals how the institution is growing.

5. Politecnico and national and international ranking

The Politecnico is very attentive to its national and international ranking, and for this reason it monitors the different rankings published and the determining factors of each, and tries to implement initiatives that will ensure continuous improvement in its ranking.

Based on Law 1/2009 the Ministry also uses a system of performance indicators (on teaching and research) to assign at least 7% of the total national resources allocated annually to the universities. Generally they evaluate the ability of the students to graduate with their class, self-financing of research activities, the degree of internationalisation, the ability to perform technological transfer. The Politecnico has always ranked among the top national universities and this rating in 2010 enabled it to receive the same amount of government funding, despite the fact that funding was cut by a total of 3.7% and some universities lost as much as 5.5%.

INTERNATIONAL RANKING

Politecnico, regularly, monitors some national and international rankings, selected considering their impact, relevance and attention to engineering fields.

- #### ARWU – Academic Ranking of World Universities (Shanghai Jiaotong)

The ranking of the Politecnico di Torino at **the world level** is stable, but its indicators are improving.

Year	World Rank	Regional Rank	National Rank	Score on Alumni	Score on Award	Score on HiCi	Score on N&S	Score on PUB	Score on PCP
2010	401-500	169-204	14-22	0.00	0.00	14,4	0.00	28,3	15,1
2009	402-501	171-208	14-21	0.00	0.00	12,6	0.00	26,6	14,1
2008	402-503	169-210	13-22	0.00	0.00	12,6	0.00	24,8	13,2

- #### ARWU – Ranking of World Universities in Engineering/Technology and Computer Sciences

The ranking in the engineering and computer sciences sector is stable, but the indicators are improving. The Politecnico di Torino is confirmed in 1st place in Italy.

	World Rank	Score on HiCi	Score on PUB	Score on TOP
2010	52-75	36,7	54,9	76,0
2009	51-77	35,0	52,0	80,0
2008	51-75	35,0	44,0	75,0

- #### QS – Top Universities (until 2009 Times Higher Ranking)

POLITECNICO DI TORINO

SELF-EVALUATION REPORT

The Politecnico di Torino has shown steady improvement.

	World Rankings	Engineering & IT
2010	451-500*	100
2009	401-500	113
2008	<501	127

The table below illustrates the details of its ranking in 2010.

OVERALL		Score	Rank
QS World University Rankings®		24,8	451-500
SURVEY INDICES		**Score**	**World Rank**
Academic Reputation		-	301
Employer Reputation		47	219
FACULTY AREAS		**Score**	**World Rank**
Arts & Humanities		-	-
Engineering & Technology		23,4	100
Life Sciences & Medicine		-	-
Natural Sciences		16	229=
Social Sciences & Management		-	-
DATA INDICES	**Ratio**	**Score**	**World Rank**
Faculty Student	30,9:1	-	301+
Citations per Faculty	21,9	-	301+
International Faculty	11.1%	26	291
International Students	9.3%	34	299=

- **Green Metric Ranking of World Universities**

In analysing the good ranking of the Politecnico, it should be noted that the ranking, focused on aspects of environmental impact, is in its first edition and this may surely have affected the outcome.

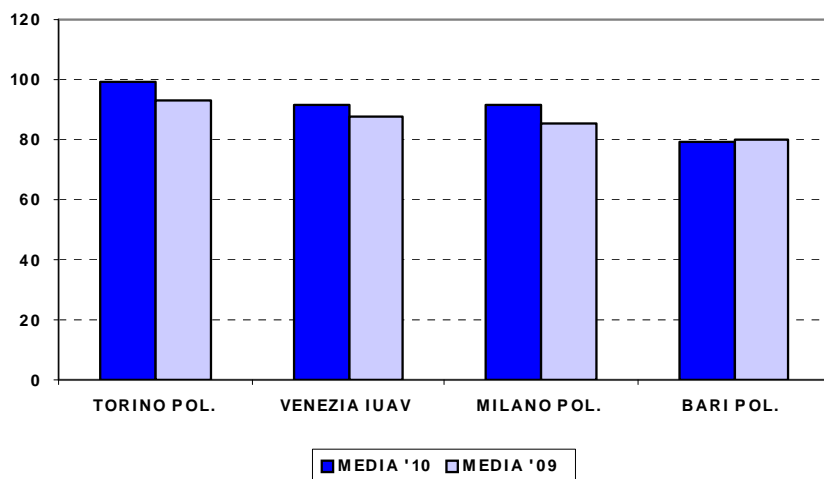|	World Rank	Europe	Italy
2010	**82**	**31**	**3**

NATIONAL RANKING

- **Censis – *General classification of universities***

The Politecnico di Torino is the first Italian university and has shown steady improvement.

POS. – UNIVERSITY – SERVICES – SCHOLARSHIPS* - STRUCTURES – WEB – INTERNATIONALISATION – AVERAGE 2010 – AVERAGE '09

POSIZ.	ATENEO	SERVIZI	BORSE*	STRUTTURE	WEB	INTERNAZIONALIZZAZIONE	MEDIA 2010	MEDIA '09
1	TORINO POL.	75	108	101	106	110	99,3	93,3
2	VENEZIA IUAV	78	110	89	88	95	91,8	87,5
3	MILANO POL.	71	75	103	106	104	91,6	85,3
4	BARI POL.	83	81	83	66	77	79,2	80

SELF-EVALUATION REPORT

Chart with bars for TORINO POL., VENEZIA IUAV, MILANO POL., BARI POL. comparing MEDIA '10 and MEDIA '09.

MEDIA = AVERAGE

- **Censis – *Classification of Faculties***

The Politecnico di Torino has improved its position in the Engineering sector.

POSITION 2010   FACULTY   2010   RATING*   POSITION '09

POSIZIONE 2010	FACOLTA'	2010	RATING*	POSIZIONE '09
12	ARCHITETTURA	86,8		9
4	INGEGNERIA	98	AAA	5

ARCHITECTURE
ENGINEERING

During 2010 the Politecnico decided to submit to a process of evaluation for the purpose of obtaining a financial rating. The rating expressed by the company "Fitch-Rating" was "A" which reflects an opinion of solidity and medium-high financial reliability, accompanied among other things by a stable evaluation of prospects,

6. **Autonomy with respect to:**

- **Human and financial resources**

For **academic personnel** in Italian universities, employment is with permanent public employment contracts. From 1998 until the present time, selections were managed by the university, but with evaluating committees entirely made up of national educators in the particular sector group and with a single internal member. Starting in 2011 following the recent law 240/2010, a national selection will provide a list of suitable candidates from which the universities must chose when making local selections. This recruitment process excludes only a limited number of foreign professors with proven scientific experience, who can be chosen directly by the university.

SELF-EVALUATION REPORT

The universities may programme their development independently, with the sole financial limitation that if the personnel costs exceed 90% of the Ministry funding for its operation there are limits or blocks on further hiring and penalties with regard to the assignment of government funds. The universities are required to send the Ministry their plans for development of the personnel to enable to perform a preliminary control on respect of the limitation. In the last ten years, however, the regulations have often imposed periodical blocks on hiring, or limited it to turnover, valid for all universities regardless of their financial condition (currently there is the possibility to replace only 50% of resignations). Moreover, in the last years the State offered incentives for retreatment.

With regard to retribution, flexibility is very limited in Italy, the salaries being set by the government and increases being linked in part to the other sectors of the public administration and in part to seniority in the career. There is also no possibility to make adjustments in the workload, as the regulations prescribe a minimum number of teaching hours. A law passed in 2009 will establish a stronger bond in the future between merit and retribution, and an earlier law passed in 2004 made it possible to assign additional funds in recognition of the ability to self-finance research, particular commitment to teaching and administrative activities. However, now for the period 2011-2013, salary level are frozed due to the recent financial law.

The recent law 240/2010 introduced important new elements in the recruitment procedures and in the juridical status of the professors, above all by eliminating the position of permanent researcher and by reducing the types of research contracts.

New rules have a common aim: reducing Higher Education fixed costs and avoiding some types of non stable employment contracts. This has a good impact on financial issues, but it can damage service level to students and ability/efforts for innovating (an example is offered by international efforts: Politecnico aims to be an international campus and for this purpose has to invest also in young researchers with an international career, but limitation to recruitment policies and impossibility to differentiate salaries lead to some difficulties).

With respect to **financial resources**, the universities were granted the autonomy to manage Ministry funding in 1993, and at the same time the government changed its method of assigning public resources. The government finances the universities with specific funds for operations, construction and for financing programming and research projects. Several universities have stipulated programme agreements for funding specific initiatives (Politecnico for building).

The operating fund is assigned partly on a historical basis and partly based on a formula that considers the dimensions of the activity, the quality of teaching and research, the outcome of the training processes, and the ability of the universities to contribute through fundraising activities (especially international funds). Theoretically, this latter portion should grow over the years to cover the total allocation of resources, but in practice the historical portion has been safeguarded. It was only in 2009 that a new law was enacted, coherent with the ministry goals of providing incentives for merit and quality of the activities, that sets an initial level of assignment rewarding the system at 7%, with the goal of reaching 30% within four years. This principles have been remarked also in the L.240/2010.

The fund for programming is divided on the basis of the performance achieved by the universities in several indicators that measure the guidelines of development of the system established by the Ministry, and on the basis of the declared areas of focus of the university.

The government is not the only source of financing of the universities, which can also stipulate contracts and agreements with other parties. With respect to income, limitations concern indebtedness, which may not exceed fifteen percent of the Ministry funds, net of personnel costs, and tuition fees, which must not exceed twenty percent of the Ministry funds for operations.

Universities are responsible for all their expenses (investments, maintenance of buildings, personnel, operating costs) and are free to manage the assignment of public funds as well as the other resources they acquire,

SELF-EVALUATION REPORT

aside from the cuts on public spending imposed, and that often involve all sectors of the public administration, including the universities. The universities is not independent in the financial management of their liquid assets, they must operate in a system of unified government treasury that does not permit the application of interest on savings, and does not permit them to perform temporary operations of reinvestment of the resources.

The administration and accounting management of the universities is subject to direct control by the Ministry: there must be a representative of the Ministry of the Economy on the Board of Auditors, as well as a representative of the Ministry of the University. Accounts are monitored by the Court of Accounts and information must be sent periodically to the different Ministries regarding the composition of the financial statements, incoming and outgoing cash flows and the level of indebtedness. It is also necessary to consider that starting in 2007 there was a greater interest in the university system by the Ministry of the Economy; it is actively cooperating with the Ministry for the University to define new scenarios of development and has established an interministry fund to be assigned on the basis of evaluation and innovation in the introduction of managerial instruments.

- **Capacity to set its own profile for teaching, research and innovation**

The universities in Italy are independent in deciding their educational offering and the areas of focus of their research and technological transfer.

As regards the development of the educational offering, the activation of new Faculties and new courses is proposed by the university after obtaining the consent of the National Evaluation Committee and the Regional Coordination Committee. At the present time, universities are not allowed to open Faculties and campuses in cities other than those in which they are already located. The creation of new universities also follows the same procedure as that of degree courses, on condition that their costs are financed by sources other than the government, otherwise they must be covered by the multi-annual programming agreed by the universities with the Ministry (Presidential Decree no. 25/1998). In deciding the courses, there are minimum requisites that must be complied with in terms of composition of the faculty.

- **Capacity to set its own governing structures**

Although there are few definite rules, leaving a high degree of autonomy to the universities, the current model of government in Italian universities is characterised by collective decisions, with limited involvement of external elements and some fragmentation due to scientific choices being made by the Academic Senate and administrative decisions being made by the Board of Directors, as well as by systems of identification of monocratic bodies based on consent of the electorate. There is also considerable fragmentation of competencies among the Faculties, in charge of teaching organization management and recruitment, and the Departments responsible for the coordination of scientific activities to which the regulations have assigned administrative, financial and accounting autonomy with respect to the university.

The recent law 240/2010 has ruled on these aspects, however, and has set some limits that the universities will have to respect in preparing their By-Laws (to be promulgated by Autumn 2011 at the latest):

- The Rector, elected for a single term of 6 years, is the legal representative of the university with functions of orientation, initiative, coordination of the scientific and didactic activities, towards whom the Senate can bring a motion of no confidence after two years of the term.
- The Academic Senate, which represents the different scientific areas and no longer represents the different categories of personnel, has the sole task of formulating proposals and expressing the required opinions on teaching, research, services to the students, annual budgets, triennial budgets and financial statements and on the activation, amendment or suppression of courses, campuses, departments, structures, and that

with respect to its previous duties is no longer involved in any way in procedures of programming, recruitment and selection of the academic personnel

- The Board of Directors, which consists of only 11 members, in part selected by public calls open to faculties outside the university, and of which the Rector can no longer be the chairman, has duties of strategic orientation and final approval of decisions through the financial allocation of resources

- The Board of Auditors is responsible for monitoring the administration and accounting aspects of the university, and the Evaluation Committee is responsible for evaluation of the scientific and didactic activities and services offered by the administrative areas
- Presence of students on all the university boards
- Assignment to the Departments of responsibility for research and teaching, as well as all proposals having to do with human resources. Definition of a minimum dimension of departmental structures (that requires the Politecnico to unify at least 7 Departmental structures)

7. A context and a brief explanation of the national quality assurance system

Italian law requires the universities to perform an internal activity of evaluation of the administrative management, teaching activity and research, as well as actions in support of student facilitations. For this purpose, at every university, specific Internal Evaluation Committees have been established. The Committee must also ascertain, by comparative analysis of costs and yields, the correct use of public resources, the productivity of research and teaching, and the impartiality and proper performance of the administrative action. These committees are composed of a minimum of five to a maximum of nine members, two of which are appointed by scholars and experts in the field of the evaluation, even in non-academic fields.

At the national level, until last year, the following committees were in operation:

- the National Committee for the Evaluation of the University System (CNVSU), whose tasks are to establish the general criteria for evaluation of the universities' activities; prepare an annual report on evaluation of the university system; promote experimentation in the application and spread of methods and practices concerned with evaluation; decide the nature of the information and data that the internal evaluation committees of each university are required to communicate; implement an annual programme of external evaluation of the universities or individual didactic structures; perform technical evaluations on proposed new state and other university institutions in view of authorization to issue degrees having legal validity; prepare reports on the status of implementation and results of programming; prepare studies and documentation on the status of university instruction, on the implementation of student facilitations and on access to the university courses of study; prepare studies and documentation for the definition of criteria of division of the portion to balance the funds for ordinary financing of the universities; perform activities for the Ministry in the fields of consultation, investigation, evaluation, definition of standards, parameters and technical regulations, also with regard to the specific activities of the universities and projects and proposals presented by them. The Committee is an independent group that interacts autonomously with the universities and the Ministry, disposing of its own technical-administrative office and specific funding provided by the ministry, and can appoint groups of experts, organizations or specialized companies to perform research and studies

- the Orientation Committee for the Evaluation of Research (CIVR): this committee operates in support of the quality and best use of national resources for scientific and technological research, according to its independent determinations, with the task of indicating the general criteria for the activities of evaluation of research results, promoting experimentation, applying and spreading methods, techniques and practices of evaluation of the organisations and scientific research institutions, programmes and scientific and technological products and research activities, promoting, in this connection, comparison and cooperation among the different institutions operating in the sector at the national and international level. In 2004,

SELF-EVALUATION REPORT

the CIVR supervised the three-year evaluation of Italian research 2001-2003 with a method inspired by the British RAE

Starting from 2010 this committee will be replaced by the National Agency of Evaluation of the Universities and Research (ANVUR) that will have to evaluate the efficiency and effectiveness of teaching activities on the basis of the international quality standards, also with reference to the levels of student learning and their entry on the labour market, evaluating the university structures and research organisations, the university courses of study, research doctorates, master's degrees and schools of specialisation, evaluating the quality and results of the research projects, monitoring the acquisition of external financing, activities of cooperation and exchange of researchers with public and private subjects, evaluating the quality and results of the research through international criteria.

Regarding teaching, in Italy there has not been a National Agency for Quality (maybe this role will be played by ANVUR). Some universities, coordinated by the National Conference of Rectors (CRUI), developed some experiences of evaluation (Campus and CampusOne).

POLITECNICO DI TORINO

SELF-EVALUATION REPORT

Body of the report

The body of the self-evaluation report strives to strike a balance between description and critical analysis (i.e., identify the strengths, weakness, opportunities and threats) and should have the following sections, which follow the four sections in the checklist:

1. **Section I: Norms, values, mission and goals: What is the institution trying to do?**

Starting in November 2005, the Politecnico di Torino undertook the process of definition of a Strategic Plan, which was approved by the Academic Senate in 2007 and outlines the project of growth and development of the university. It will be the main reference for subsequent actions.

The process undertaken by the Politecnico, and which it intends to pursue in the future, is characterised by the duality of a model capable of expressing its local roots and spirit of service to the territory, combined with the ability to be a great international university, in which talents from all over the world come to study and from which the undergraduates, graduate students and researchers take the first steps in their international careers.

The developmental aspects of the strategic plan include:

- A Research University at the international level
- An advanced educational model
- A new model of governance
- The university as a regional network, open towards the city and the Piedmont region
- A policy for internationalisation
- A strong bond with the institutions, business and the professions
- The central focus on the human capital and the quality of life at the university

The following is an detailed outline of the goals and strategies, focusing attention on the sectors most characteristic of the university (research, technological transfer, teaching and internationalisation) and on the human capital, in consideration of the fact that, since the university is a provider of an intangible asset like culture, attention to and valorisation of human capital are necessary conditions for its success.

As regards the activity of **RESEARCH AND TECHNOLOLGICAL TRANSFER**, the Politecnico intends to qualify itself more and more as a *research university* and as an academic community whose fundamental goal is the increase and transmission of knowledge. The lines of the Strategic Plan that focus on this aim are: lines 1 "A research university at the international level", 4 "The university as a regional network, open towards the city and the region" and 6 "A strong bond with the institutions, businesses and the professions".

Among the goals that emerge from the Plan relative to strategies for Research and Technological Transfer, and that the organs, the research structures and those of administrative and management support are expected to implement, the main ones concern:

- valorisation of the sectors of strategic research, the creation of opportunities for activities of interdisciplinary research, providing incentives for education and the consolidation of research groups characterised by adequate critical mass;

- the creation of an Advisory Board, consisting mainly of foreign scholars of high scientific prestige, with the task of supporting the Academic Senate in the definition of the university strategies and identification of the sectors of strategic research;
- enhancement of the university in terms of structures, instrumental goods and technical personnel for the performance of research activities;
- the commitment of the administration in active support of research projects during the preparatory stages, at the time of proposal and later, with the management and accounting processes;
- the strengthening and qualification of the technical personnel who cooperate in the activity of experimental research and the recruitment of highly qualified laboratory technicians;
- definition of procedures for the systematic evaluation of the research projects at the level of the structures and research groups in the university, and consequent activation of mechanisms for the distribution of resources to structures and groups on the basis of the outcome of this evaluation;
- assessment of the lecturerers' commitment to research and consequent application of economic incentives for high quality individual research, as well as mechanisms for compensating the effort given to research, teaching and management of the structures;
- planning over multiple years of the number of research positions and relative modes of access (tenure track);
- recruitment of highly qualified researchers at the international level, making available the necessary resources for them to undertake independent research;
- reviewing the modes of progression of the researchers in their career, reinforcing aspects of merit;
- promotion of actions tending to create visiting researcher positions in order to attract individual foreign researchers or highly qualified research groups at the international level;
- providing incentives for the participation of the university's researchers in international and European research projects;
- promotion of the construction of research laboratories in the *Cittadella Politecnica,* with training courses and activities connected with the transfer of knowledge to the enterprises, institutions and professions, in a view of a strong interaction between academic and non-academic research;
- decentralisation of activities for a strong integration with the local institutional, economic and social context, and the promotion of services to the area and activities of permanent education and technological transfer;
- encouraging joint projects between the university and businesses, professions, local administrations and cultural institutions;
- strengthening the research doctoral process in order to obtain integration between research skills and management and financial capabilities, in order to facilitate the entry of research doctors into the world of business, the professions and the institutions;
- reviewing relations with institutions and foundations in the direction of stronger interaction and greater acknowledgment and valorisation of the research activities performed by university personnel;
- implementing a uniform, consistent policy with regard to the protection of intellectual property in research contracts.

As expected from the above objectives, the University, in addressing a long-term project and an extensive impact, in research, technology transfer and services to the territory, has developed into the *Cittadella Politecnica* a real Business Research Center, that is a shared space, physical also, in which are merged and synthesied the academic knowledge and its practical application. *Cittadella* is a sort of "training technology transfer" in its various modes of implementation. This is a model that has emerged and took shape with the passage of time and with a growing awareness of the dynamics of the University intended to be an attractive location for large investments in research by corporations and technology transfer to the system of small and medium-sized enterprises. The Business Research Center is today, with more than 20 industrial research

centers, the presence of innovative companies of the Incubator of the Politecnico, the Venture Capital Hub, a model of reference in the national university system.

The model of the *Cittadella Politecnica*, combine the objective of fostering collaboration between academic and industrial research groups, trying to reduce, thanks to the physical proximity, the traditional gap between the two entities, with the increase of the impact on the area in terms of development of the business and job creation. The establishment of private research centers in the *Cittadella* and the creation of several start-up business incubator located, has led, since 2007, the creation of more than a 2.000 jobs.

In the realisation of the Strategic Plan with respect to the goals inherent to scientific research and technological transfer we can identify:

▪ Strengths

The development perspective, in an integrated and multidisciplinary view, serves to increase positive fallout for the university also in economic terms, through the development of a model of relations between the university and outside organisations, particularly businesses, characterised by the breadth of the spectrum of cooperation, which can be expected to develop on many interrelated fronts, with concrete objectives, reciprocal expectations and a steady flow of investments. It is a model that the university has applied more and more in the last few years, and the results testify to the effective progress that rewards the ability to interpret opportunities for innovation in an integrated and interdisciplinary manner, through the synergy of groups operating in the often very different sectors, from the thematic standpoint, in which the enterprises and scientific community move.

A few examples will help to illustrate how, in the sphere of industrial relations, one of the elements of success of the research groups' activity is the ability to proceed in several different areas, maintaining close integration and coordination: the partnerships with General Motors and Pirelli Tyre, or more recently with *Lavazza* spa and *Ferrero* spa, illustrate the concept of research and technological transfer and the "full circle" approach that the university aims to build, furnishing support from the initial contacts through the follow-up all the way to the conclusion of the activity.

▪ Opportunities

As regards research, developments in the context in which the Politecnico operates, like all the universities, have come out with increasing strength in the last few years. The competition for access to different financing opportunities has grown, along with the recognition of the many opportunities it can guarantee for the emergence of activities of "excellence", with positive and identifiable fallout also at the social level, particularly in pioneering sectors, but also in basic research and, even more, in applied research. For the university, and the Politecnico has chosen to define this clearly in adopting certain lines of action in its strategic planning, the ability to create and nurture **interdisciplinary groups and theme areas** of research characterized by significant **critical mass,** also from a numerical viewpoint, with the ability to aggregate many avenues of research characterised by greater interaction, in respect of the freedom and specificity of the researchers, is the key to developing an obvious added value in the production of research with a high qualitative and quantitative impact. It is **not an easy process to implement**, as it must depart from the traditional organisation of university research structures, often characterised – in the exercise of their decisional and organisational independence – by small size and limited interaction with the others, and move towards a model capable of valorising the excellence of the individual competencies, amplifying them and enabling them to create structures and infrastructures that would otherwise be impossible to realise.

▪ Threats

SELF-EVALUATION REPORT

In relation to key points of the Strategic Plan, enucleated above, it should be emphasized that the achievement of targets particularly relevant and innovative capacity, such as primarily the identification and exploitation of areas of strategic research or defining procedures for the systematic evaluation of research results, in conjunction with a review, which values more and more elements of substance, method of career development of researchers, inevitably presents aspects of innovation that can slow down the full effect. The identification of strategic sectors, even in a non-general as the Polytechnic University, unless accompanied by the ability to expand and enhance the interdisciplinary component highlighted above, carries the risk of excessive differences between areas of research, in terms of visibility and opportunity to access to resources.
In addition, as a proper element of all complex systems, governance and coordination of research require processes involving the interaction and integration between decision-making bodies or consultative with different and specific roles and responsibilities: this interaction, while in a side it ensures a collegial decision-making and in taking a broad representation of the choices, on the other hand leads to a significant degree of fragmentation in the course of decision and activities monitoring that may lead to a punch that is not always appropriate and effective governance and decision-making that can create the introducing of elements of discontinuity.

- Weakness

The actions aimed at achieving a greater degree of interdisciplinary research, designed to most effectively exploit the potential of the research teams of the University, drawing a path is not easy to implement, partly because of critical elements Structural university system. The research groups show evidence of fairly widespread reluctance to collaboration with other groups, in different fields of science or similar and complementary. The traditional "verticality", that means enhanced focus on very specific fields, is certainly a factor of attention, as well as the insufficient willingness to open international scientific areas, leading to lower performance opportunities, both in terms of scientific visibility and expansion of networks of collaboration, both in terms of financial resources attracted.
Finally, we still note significant margins for improvement in the sensibility of the researchers on identifying the best strategies for exploiting the results of scientific work, as a university technology is undoubtedly favored in terms of sensibility on IRP issues, it is often very diffused the culture of the publication, which therefore results in an inefficient use of instruments of exploitation of research such as patents, still frequently used as an academic title and not as an instrument of technology transfer and exploitation, including economic, of the research.

As regards **TEACHING AND TRAINING**, the second strategic line of the Plan summarises in its title "A model for advanced education" identifies six lines of action tending to respond to the increasing demand of culture and "polytechnical" education expressed by public and private stakeholders, and the desire to harmonize the systems of higher education, as stated in the Sorbonne Declaration (1998) and that of Bologna (1999). The six lines are:

- rationalisation of the educational processes for the Bachelor's and Master of Science degrees
- qualification of the educational processes for the Bachelor's and Master of Science degrees
- strengthening of education at the third level
- improvement of connection with the job market
- strengthening of services to students and attention to innovating educational models
- development of an offering of permanent education and professional updating.

POLITECNICO DI TORINO

SELF-EVALUATION REPORT

Continuing identification of these lines, pointing to a training model evolved, the Politecnico in the last years has undertaken a review of the organization of the Bachelor and master degrees, creating a clear separation between the first and second level, so that access to degree takes place through mechanisms more selective in a position to assess the actual quality of the scientific, technical and cultural development of candidates. Through the implementation of that line, in addition, the university has simplified and streamlined the provision of training in the first two levels and has enhanced the feature on the third level, reviewing the whole process of evaluating the quality of teaching, what is taught and to what is learned, the adequacy of the profiles in output compared to the labour market and the recovery actions of students inactive or "drop out".

In the realisation of the Strategic Plan with respect to the teaching and training goals, we can identify:

- Strengths

    For the achievement of its aims, the Politecnico di Torino can count on its good reputation and an educational offering focused on two sectors with a high degree of specialisation: engineering and architecture.
    This specificity, in line with that which characterises the industrial structure of the Piedmont region, has enabled the university to build solid, lasting relations of cooperation with the business associations, the regional business system with its contacts on the labour market, gearing its educational and research programmes to the levels of excellence they require.
    In a context of uncertainty and scarce resources, therefore, the Politecnico di Torino has been able to benefit from these solid relationships, its ability to innovate and follow the changes and new needs expressed by the companies, students, families, and can operate independent of certain national logics, counting on the economic and political support of people who believe in the university's mission and are prepared to cooperate for its attainment.
    The Polytechnic of Turin was also one of the first universities in Italy to structure its training on two levels: a university degree supported parallel to the five-year degree. The first was of a more vocational route and a shorter process (three years) to start the student directly to employment, while the five-year course aimed at establishing a broader professional profile and solid cultural background. Following the University in the academic year immediately following the enactment of Decree 509/99 has activated the first degree courses, lasting three years and also for the acquisition of specific professional skills, once the course three-year study, students have the opportunity both to enter the world of work is to continue to Level II courses and in 2004, in fact, were also activated the Master of Science programs, ready to welcome the first graduates of Level I intend to continue studies.
    By flanking the actions undertaken subsequent to the ministry provisions with initiatives linked to the development of new technologies in support of teaching and services to the students, internationalisation and centralisation of teaching on a single pole of reference, and rationalisation of the educational offering, the university was able to structure an offering that follows the changes in progress among its primary users, stimulates their interest based on a multicultural and multidisciplinary education and one that offers the labour market solid, flexible, change-oriented, well-rounded profiles.

- Opportunities
    The city of Turin has experienced an epochal change in the last decade, from a metropolis with a strong industrial connotation linked to a few industrial groups (including some of the world's most important) and a culture of widespread mechanical and electronic skills that guaranteed a highly professional, versatile labour market, to a metropolitan area that has invested in infrastructures for urban requalification, internationalisation and communications (without forgetting the Turin Winter Olympics in 2006), with important programmes of education, training and research targeted on increasing the city's ability to attract young people, businesses, investors and elements with high innovative potential.

SELF-EVALUATION REPORT

The Politecnico di Torino, with its educational and research mission concentrated on sectors of high innovation and technology (engineering and architecture), on the quality of its teaching and research performance at the basic and applicational levels, on policies implemented by the organs of governance and the Rectors who, over the years, have always acted in close synergism with the system, sharing the vision, strategies and programmes, can grasp the opportunity to participate actively in the change and offer itself as one of the protagonists of change for the construction of "Turin, a busy city that knows what it's doing and does it right, whose chief resource is knowledge" (as the Strategic Plan of the City of Turin declares).

▪ Threats
As indicated above, in the strong conviction of the opportunity to achieve the goals outlined in the Strategic Plan, the University has initiated a wide range of innovative initiatives and the rationalization of teaching. Please note however that these pressures for change are sometimes constrained by a national context of political and economic instability, with a growing uncertainty over available resources in terms of finance and personnel. Recent reforms of public administration and allocation criteria of the Fund at times limited university funding university autonomy and the ability to immediately pursue the objectives which it arises.

Moreover, constrain to human resources' policies (reduction of non stable contracts, limitation of turn-over) and the consequent protest of researchers could cause a long period of difficulties in organising teaching activities.

▪ Weaknesses
In order to achieve the objectives set out in its Strategic Plan, as explained above, the Polytechnic of Turin has identified the internationalization of education, knowledge and hybridization in the anticipation of change some of the basic elements of the action taken. The process can and must be completed with the full involvement of all members of the University. In fact, while almost all of them took full advantage from the beginning of the opportunities offered by the change, with peaks of excellence, highly innovative, other parts, while representing the continuity and solidity of the University, still show some resistance sometimes. It should however be noted that these weaknesses are gradually decreasing and thus the process of innovation, now fully launched and in progress, is increasingly involving all actors of the University and the region.

Other points of weakness regarding strategies and actions for improving quality of teaching and services to students, are the scarcity of spaces for attending lessons and for studying and the difficulties to organising a library services open when it is useful for students. In the last years the number of students is increased and, despite the efforts to rationalise courses, some more spaces are necessary. Plans of development (i.e Mirafiori) surely will solve part of this problem, however, for an university that has decided to share in the same spaces research, technology transfer, business incubation and teaching the problem of spaces has to have a great attention.

As regards **INTERNATIONALISATION**, the strategic plan requires that the Politecnico in its strong international orientation should:

▪ Promote conditions capable of favouring incoming and outgoing internationalisation
▪ Support international mobility of the students and personnel of the Politecnico
▪ Attract students, PhD candidates and researchers

SELF-EVALUATION REPORT

- Support international cooperation

These are goals that can be implemented while contributing at the same time to the realisation of the aim of the Plan tending to make the Politecnico an international research university.

In the process of internationalisation plays a central role the progressive expansion of the training in English (Bachelor, Master) through which the University is to ensure:

• the increased attractiveness in the international market training;

• a higher availability and adequacy of students (domestic and international) to supplement their studies with a training period abroad;

• training of bilingual teachers naturally inclined to undertake periods of teaching in foreign universities;

• diffusion of bilingualism in all administrative and support students services.

The activities relating to incoming and outgoing mobility are directed, in fact, not only to students but also to teachers and administrative staff.

The outgoing mobility of students based on agreements with many universities of highest level in Europe and outside Europe, have traditionally been an element of attraction for international students and for students from other regions. Politecnico is one of the few Italian universities that offers equal opportunities for European (Erasmus) and non European mobility. In this sense, in 2010 the University has uniformed programme of bursaries offering also extra-moneys to Erasmus students.

One of the goals of Politecnico is to support a structural policy of internationalisation of the faculty, by providing incentives for periods of research and teaching in prestigious foreign institutions, also by integrating Erasmus and Erasmus Mundus teachers mobility. It also intends to favour international mobility of the technical and administrative personnel, so as to facilitate the university's growth through the acquisition of greater linguistic competence, good practices and operating skills deriving from professional experiences at foreign universities.

In order to spread the culture of internationalisation in the world of territorial innovation, Politecnico intends to place particular emphasis on ensuring contact of local businesses open to international experiences with foreign students, on involve local partners in international networks, as well as in promoting of immigrant communities in the society and in the organisation of international cultural events.

In the realisation of the Strategic Plan with respect to the goals of internationalisation, we can identify:

- Strengths

The Politecnico already has excellent international visibility and this should be suitably reinforced through an effort made to create high level systems, highly visible in the sphere of education and research, offered also to foreign citizens, in an attempt to find the simplest solutions to bond with different cultures not only from the scientific and educational viewpoint, but also from the linguistic, cultural and administrative viewpoint.

The presence of educational centres considered by outsiders to be "centres of excellence" is an instrument that will ensure improvement in the process of internationalisation.

Another fundamental element is the availability at all levels (teaching, research, administration, etc.) of personnel open to the process of internationalisation, culturally prepared to implement the plan.

- Opportunities

The ability to attract foreign students at all levels depends in the first place on the quality of the educational offering, of which the Piedmont region's system guarantees an adequate level. There are a few aspects that, in a view of quality, can contribute to encouraging enrolment of students from abroad, in particular the provision of courses in English and the activation of specific educational processes in cooperation with international institutions. One of the fundamental keys to increasing the ability of the system to attract students from abroad is the offering of special services for them. Foreign student and researchers must have access to a

SELF-EVALUATION REPORT

varied range of goods and services, from the basics (housing, healthcare, etc.) to those linked to leisure time (cultural offerings, social opportunities, etc.). Foreign students also need a special approach to teaching (support in the language difficulties, the need to remedy gaps in their education or methods carried over from their previous educational experiences, etc.). Residential services must therefore be accompanied by a strong service of customized cultural support. Foreign students then require special assistance in exploring the industrial world, also to overcome the deficit of interpersonal connections on which the national students can count.

To strengthen the actions of internationalisation for the future, it will be important to develop uniform offerings of mobility among the different didactic structures, encouraging the growth of those areas in which the offering of mobility abroad is lower, and creating forms of support for mobility towards prestigious institutions in countries even outside the EU, providing integrated educational processes.

Important feedback for the optimisation of services for mobility at all levels will be available in 2011 from the results of surveys made in the sphere of several *Erasmus Mundus* projects, for a large number of beneficiaries in Italy and European countries, as well as many extra-EU countries.

The attraction of foreign students can certainly be favoured by the availability of advertising instruments capable of increasing the visibility of the university and the stipulation of cooperation agreements with other universities in the geographical areas of strategic interest. It is also important to develop and strengthen modern systems of communication that systematically use "young" means of communication as well as the traditional, more formal media.

- Weaknesses

Activities of internationalisation often suffer from cultural resistances to the process of internationalisation that can slow the implementation of sustainable processes favourable to the university.

The discomfort that the system as a whole feels is often linked to the quality levels of the students who are placed in different courses of study: the quality of the selected students is often not suitable to form homogeneous classes and that makes difficult for teachers to realize an effective integration. In the future, after these first years of expansion, criteria of selection have to be more discriminatory and the selection Commission will acquire a strategic role for assuring quality of students.

Today, there is not a good information regarding quality of teaching that students of Politecnico can acquire abroad. As a consequence, recourse to consolidated instruments like the *Erasmus* programme, though it has increased in recent years in line with the other large institutions of northern Italy, is still limited. The fact that students fail to take advantage of the opportunities for mobility does not depend on the availability of international agreements, or even on an assessment of an economic nature, but to a greater extent on the traditionally low propensity of Italian students to engage in mobility.

As regards the internal culture, the lack of an appropriate, far-reaching system of information that enables everyone to know, understand and contribute to the process of internationalisation is one of the greatest obstacles. In some cases, this lack can lead to incomprehension in the internal evaluation and thereby isolate the activities of internationalisation, so that they become ineffective and are considered as elements not integrated in the university system.

The system outside the university (legislative and regulatory context) sometimes creates obstacles to the realisation of a correct process of internationalisation. Moreover, the deficit of knowledge at the international level of the university's strong points slows the process of internationalisation.

HUMAN RESOURCE MANAGEMENT is an essential element for the performance of all organisations, and particularly so for the university, that bases its mission essentially on the quality of teaching, on the validity of research and on the ability to enact processes of technological transfer.

POLITECNICO DI TORINO

SELF-EVALUATION REPORT

The personnel, and above all the academic personnel, are the most important resource for the university institution, its "intangible capital" on which the creation, valorisation and fertilisation of "knowledge" depend.

The Politecnico di Torino, aware of its importance, has devoted a line in its Strategic Plan to Human Capital and its valorisation. This has certainly become an important reference in personnel policies, although in recent years continuous and sometimes changeable legislative actions have strongly affected this aspect.

The actions defined in the Strategic Plan include:
- Lowering the average age of the faculty, through the planning of different scientific areas of action in favour of a generational turnover
- Providing incentives to the personnel to increase performance in research activities
- Training and requalification of technical-administrative personnel
- Improvement in the quality of life at the university

In the realisation of the Strategic Plan with respect to the objectives relative to human resources, we can identify:

- Strengths

In the last five years the university has undertaken a policy with regard to the academic personnel tending to:
- lower the average age of the faculty
- accelerate the career for deserving young people, undertaken experimentally with a procedure of "internal call" and evaluation via international referee.
- attract visiting professors and visiting researchers (regional calls and regulations for visiting faculty), promoting international exchanges and mobility and the attraction from abroad of recognized authorities through some direct calls and exchange agreements
- provide incentives for research through a reserve of research positions in favour of scientific sectors in which brilliant young scholars and winners of competitions in research projects with international financing can operate (such as the FIRB competitions).
- promote actions to create research professorships financed by outside companies and organisations
- plan over several years for a consistent number of research positions within an overall four-year programme of teaching personnel, to rationalise the distribution of resources and make explicit the effective possibilities of tenure and progress in the career

In recent years, a series of initiatives has served to improve the quality of life at the university, all in line with the Strategic Plan that recommends strengthening services in the sectors of education, culture, sports and social welfare for university employees, with particular reference to gender problems and actions to conciliate between family life and work.

In addition, the Politecnico is aware of the importance of adequate instruments for evaluating the commitment of its academic personnel to research and, as seen from the actions of the Strategic Plan, it has offered **incentives, even of an economic nature**, for the activities performed.

The university currently provides **two types of economic incentives** to its research personnel, in some cases extending them also to technical or administrative personnel engaged in the support of particular projects. **One, more traditional and consolidated, form** is an incentive in the form of compensation paid in the sphere of research activities performed by individuals or groups on order (art. 66 of Rectoral Decree no. 382/1980). The universities, as we know, in addition to their institutional activities of research and teaching, also engage in commercial activities, offering their services and skills on the market. From this standpoint, the Politecnico has one of its strong points in its specifically technological vocation and constant interaction with the industrial world, that enables it to perform research and consultation services for companies and contribute significantly to its own financial revenues.

SELF-EVALUATION REPORT

From the standpoint of management, a specific internal regulation permits **relative flexibility in the use of these revenues** that – under the responsibility of its academic reference – can be used not only to cover expenses, recruit additional human resources to assign to the research, and create a profit for the university and its departmental structures, but also to provide a remunerating incentive for the personnel involved. This is a system that offers a **high degree of freedom and can therefore serve as an important element of incentive.**

In the light of these considerations and the national context of financial uncertainty surrounding the universities, Politecnico has to seize the opportunity offered by the attraction of its scientific competence, with the goal of maintaining and increasing the activity on order, also through appropriate actions of marketing and valorisation of its research towards industry and the outside world in general.

To make this instrument of incentives more readily available and effective for researchers and departments, the institute is currently developing a **process of simplification** of the regulations and management described above, that now contain some procedural rigidity, particularly connected with the use of the different items of division of the fees received, not functional to the overall intention of simplifying internal administrative procedures.

A second type of incentive is foreseen in the sphere of research projects, and has its juridical basis in art. 26, clause 6 of Law 448/98 (connected with the 1999 Financial Law), that allows the universities to pay specific compensation as incentives to professors and researchers who perform their activity in European and international projects and programmes.

This second form is based on the idea that, where the rules of European and international projects and programmes provide for a certain percentage of reimbursement of the costs incurred for the personnel, participation in these projects, this saves the administration money insofar the contribution partially covers the salaries of the personnel involved. Considering this, and with the view of providing incentives for activities of research in European and international projects and programmes, the administration contributes additional funds, commensurate with the activity performed, to those departments whose personnel participates in such projects. The departments can decide independently, and on the basis of their own internal rules, how to use the incentive, and can assign it to increase departmental research activities (for example, by purchasing equipment, financing scholarships, assigning technical and/or research fellowships for specific periods) or to reward the researchers involved.

Moreover, with the adoption of the latest amendments to the Regulations for Administration, Finance and Accounting, effective from January 1, 2010, article 68 entitled "Incentives for Work" clause 2 states *"To valorise qualified contributions in the fields of teaching, research and management, to tenured professors and researchers, rewards and compensations can be given as incentives for their commitment, in accordance with the regulations in force and according to the rules defined by the organs of governance".*

A specific Committee has begun working to define the possible lines of implementation of clause 2 article 68.

The **"competencies of technical and administrative personnel",** viewed as the store of knowledge, skills, professional quality and behaviour, are the key elements for the organisational and strategic growth of the Politecnico and guidance for the valorisation of its personnel.

The university has therefore undertaken a project to introduce a model of management for competencies in the technical and administrative areas of the Politecnico.

All the current and future instruments for the management and development of human resources are starting to unfold and acquire coherence around this general structure: recruitment, training, analysis and evaluation of personal potential, analysis and evaluation of the structure and its individual elements. Only an overall investment in an system with integrated organisation and management models, contextualised in relation to the specific needs and characteristics of the university can become a force for change and the development of new knowledge for greater efficiency and effectiveness of the services and attainment of the goals.

SELF-EVALUATION REPORT

Over the years, considerable attention has been given to the provision of specialised training and updates. In 2009, there were a total of 78 training courses at the Politecnico, for a total of 14,100 hours: every participant was thus able to benefit on an average of about 7 hours of training.

A total of 564 hours of training were provided, with an average of 7 hours' duration for every course.

In addition to in-house initiatives, participation in outside courses is increasing steadily. From 190 participations in 2008 to 334 in 2009, for a total of 4617 hours.

Training courses in support of processes of change within the organisation and management were particularly significant, among them a training project for the introduction of the new accounting system and a training project in support of the management of Financed Research.

The training deriving from legal obligations deserves special mention, such as the training in health and safety in the workplace, which has been provided regularly over the years.

A further innovative initiative is the project for advanced professional training and updating that has been undertaken on an experimental basis, and that aims to increase the skills of the university personnel in a structured manner, by facilitating them in obtaining a university degree. Twenty-one employees participated at the outset of the project. Four of them obtained their degree in the academic year 2009/2010.

There are series of initiatives undertaken by the Politecnico di Torino, based on the indications contained in the Strategic Plan, with the conviction that a renewed and virtuous centralisation of the university system is the best way to obtain a new model of society based on the economy of knowledge, in which the ideals of equality, tolerance and progress can be realised.

The line of the Strategic Plan relative to the quality of life expresses a real sensitivity that has been explicit for years at the university; in 2005 the role of Rector's Advisor for Equal Opportunity was created and an Equal Opportunity Committee has promoted numerous initiatives in support of the needs and welfare of the family.

The actions undertaken are an effective "company welfare project" implemented by an institution that has always tried to be more "family friendly", through a strategy of global, integrated action that – based on an employee culture that has always considered the well-being of the human resources an essential requisite – furnishes concrete services and benefits, designed and implemented on the basis of the needs of its users.

Many actions are designed to conciliate family-work, with the goal of achieving a new balance between the time devoted to the professional life and the time devoted to private life, the family, parenting with all its responsibilities in terms of education and care.

The project as a whole includes actions that involve several sectors at once and can be exemplified as follows:

- flexible forms and hours of work (flexible hours, projects of remote work for personnel on maternity leave and/or in case of family problems, in accordance with the regulations in force on the subject)
- conciliation of family and work time: introduction of day-care services for small children like the "*Policino*" Baby Parking area on campus, the home baby-sitting service to facilitate returning to work, summer camps for employees' children (operated by the *Associazione Polincontri*), services of care and support for elderly family members

Other projects implemented for company well-being concern:

- Promotion of a culture of equal opportunity that has led to the introduction of the Code of Ethical Behaviour and activation of the position of Confidential Advisor to prevent every form of harassment and discrimination in the university and at all levels (students, personnel, outside collaborators)
- co-financing of commuter services for employees to facilitate home-work mobility through the use of public transport

By agreement with the Equal Opportunities Committee, the Politecnico di Torino has formulated a plan of positive action with the following goals:

- Promotion of equal opportunities for access to work, professional development and the quality of work.
- Promotion of the compatibility between work and the family.

SELF-EVALUATION REPORT

- Promotion of a culture of equal opportunity.
- Reinforcement of the relations among institutions for promotion of the principle of Equal Opportunities

On the subject of evaluation, it is worth mentioning here that the university has won awards for many of the projects presented:

- "European Corporate Responsibility Award": this competition is organized at the European level of the network of the European Consulting Companies' E-I Consulting Group for the purpose of identifying the most innovative approaches to corporate responsibility among companies and organisations in the European countries. The finalists are selected by an international jury headed by Vladimir Spidla, European Commissioner for Employment, Social Affairs and Equal Opportunities. The Politecnico was the only Italian public organisation among the 20 finalists, and received special mention.
- "Let's work together to achieve equal opportunities, e-government, simplification and eliminate corruption" award: the award is organized by the Ministry for the Public Administration, in recognition of the administrations that have effectively put the government's recommendations into practice in the four key sectors (equal opportunity, e-government, simplification and eliminating corruption). The project presented by the Politecnico di Torino (relative to all the actions of corporate welfare implemented internally) was judged worthy and was awarded in the section devoted to actions in the area of Equal Opportunities.
- "Friend of the Family Organisation" award: promoted by the Prime Minister to reward the best projects in support of policies to benefit the family. The award involved special mention and a contribution of euro 30,000 from the Department for the Family.
- Recognition by the Observatory for Women in Public Administration for the projects of well-being and conciliation at the Politecnico di Torino

- Weaknesses

The Politecnico is among the most important and respected "suppliers" of young graduates and researchers to the system of international research, but the subject of the valorisation of human resources remains one of the main weak points of the Italian academic system, and thus also of our university.

Salaries in the same position are increased in line with seniority, regardless of the effective evaluation of merit and the possibility to influence them locally is extremely limited. The new law provides shots for new teachers as a consequence of the positive assessment of the triennial report of the activities, if these shots failed they will increase funding allocation that should be rewarding for teachers and researchers (art. 6 Law 240/2010). In addition, the new legislation repealing any automatic but introduces the option for Phds and researchers still working to get the shots and then the two-year progressions faster if they opted for the evaluation of the activity report (Art. 8 Law 240/2010).

The university has specific regulations providing incentives for the participation in projects and programmes of international research and extra teaching with respect to the course load, but this does not, in any case, enable it to respond adequately to the real needs for differentiation and incentives. The new law also provides for the establishment of a fund for rewarding teachers and researchers financed half by the Ministry according to the evaluations from the ANVUR and half from the university itself.

Moreover, the processes for recruitment are mixed with those of career advancement, generating conflicts of interest and an oscillating progress of policies of human resource management, with outcomes that often reward internal personnel but fail to reward outside personnel. However, the new legislation provides for a reserve for the recruitment of outsiders, who are bound to call for at least 1/5 places available for teachers that over the past three years have not served at the university that makes the call (article 18 of the law 240/2010).

SELF-EVALUATION REPORT

A sector contract, for the technical and administrative personnel, marked by salary levels that are among the lowest in the Public Administration and that provides few incentives for the more deserving employees, combined with regulatory blocks alternating with ope-legis situations, are elements that have negative effects on the possibility of programming an orderly development of the human resources, and sometimes makes even ordinary administration difficult.

Within this framework, the type of union relations and agreements stipulated have historically hindered the introduction of methods and instruments for evaluation, in the same way that this has occurred for the academic component.

The new law also provided for the freezing of the shots of career in order to contain budget expenditures for the three years to come, but this leads to the impossibility of recovery in the future of these years for vesting requirements.

- Opportunities

In a situation of strong external limitations on activities, the following actions have been pursued and will continue to be implemented:
- analysis and evaluation of the professional skills required by the different organisational roles in relation to the development of the organisation as a whole, and comparison with the skills possessed by the individuals with a view to improving the organisation and promote the development of the new professional skills that are essential to modernise the university.
- selection targeted on new entries with respect to specific, predetermined role profiles
- management of technical and administrative personnel capable of valorising merit through adequate policies for providing incentives also strengthened by recent legislation that provides for the inability to distributes incentives for mixed-based or automatic (article 185 of Law 150/2009)
- computerisation and publication on-line of the selection procedures to permit broader access by potential applicants
- the generational collaboration policies and recognition of honorary qualifications such as Senior Professor and Senior Researcher to tap the legacy of skills of retired professors
- "acceleration of the career" to recruit young professors, privileging the scientific disciplines in which brilliant young researchers operate. This is reinforced by the new legislation that introduces the mechanism of the tenure track (as the art. 24 Law 24/2010) that in the third year of operation, the university makes an evaluation of the qualifications of researchers for the purpose of calling the role of associated teacher associated.
- exchange and mobility of young scholars on the international market, promoting joint actions at the regional level through competitions for visiting professors and visiting researchers. The new legislation provides also the retention of research grants to be given to Italian or foreign people who have made the doctorate abroad (art. 22 Law 240/2010) and the possibility for PhDs of the university to take office in universities established in different regions (art. 7 Law 240/2010).
- active exchanges between the university, research centres and corporations at the national and international level, through recourse to numerous agreements and partnerships that contemplate the sharing of research personnel and the establishment of Chairs by special agreement. That is reinforced by the new legislation that provides for full-time researchers to conduct the research in other universities as a result of agreements and for researchers to set time to perform the research at foreign universities prior permission of the rector (art . 6 Law 240/2010).

In addition, and with a view to counteracting the problem of the reduction of technical and administrative personnel, and the presence of more and more stringent limitations on recruitment and selection, an effective

policy of internal mobility, accompanied by incentives and valorisation of merit would make it possible to achieve such goals as:

- More plurality of skills among the personnel;
- Greater flexibility and more timely employment and use for specific and documented organisational needs within the structures;
- Greater rationalisation of staff and structured personnel costs
- Lesser risk of obsolescence of the know-how possessed by individuals;
- Optimisation and valorisation of the legacy of skills available.

- Threats

The management of human resources in the university suffers from a legislative framework characterised by the introduction of a series of rules, some directly applicable and other of more uncertain applicability, for the university context that, unlike other public administrations, benefits from special laws of regulatory, financial and management autonomy.

In addition, the latest laws have placed strict limits on new employment of personnel, with a view to gradual and constant reduction of the expense, effectively forcing the university to find alternative solutions to meet its personnel needs. In the three-year period 2009-2011, the Universities can assign no more than 50% of new employment for replacement of the turnover for the previous year, and are required to assign specific percentages to coverage of the personnel in the different contract areas (50% to researchers, up to 20% for full professors and the remainder to associate professors and technical-administrative personnel, amended by the introduction of the new *law*).

Parallel to these limitations on hiring, the law also affects retirement and the abolition of the so-called "untenured period" for professors prior to retirement, and gives the university discretionary powers with regard to granting a "two-year service contract" for professors and technical-administrative personnel on reaching retirement age. For the three-year period 2009-2011, a law was enacted to permit early retirement (by unilateral termination of the contract) for researchers and technical-administration/executive personnel on reaching forty years of service.

The effect of this has been a general reduction in the past year of structured personnel (-1,8%), but the block on employment has accentuated the problem of the increase in the average age of personnel: in 2009, among professors and researchers the under-30 age group completely disappeared, and the 31 to 35 age group shrank (now the majority of the personnel ranges in age between 41 and 45, while in 2004 it was between 36 and 40) and the 46-50 age group increased significantly, as did the over-65 group. For technical-administrative personnel, in six years, the average age increased from 42 to almost 44.

Thus, while on the one hand the laws are saving money for the university, on the other they may cause a potential threat in the short term and a loss of skills and know-how in a number of scientific disciplines in which the generational turnover is not ensured, leading to difficulties in the immediate future in covering the entire range of the educational offering and continuity in research activities. In the same way, a number of skills and positions lost within the organisation due to the retirement of executive and technical-administrative personnel that could not be replaced, may lead to similar losses of skills and responsibility within the organisation that will not be easy to replace in the short term.

2. **Section II: Governance and activities: How is the institution trying to do it?**

The Politecnico di Torino has a complex organisation with organs of governance, didactic, scientific and administrative structures. The current reference model is as indicated in the By-Laws enacted with Rectoral Decree no. 537 of 5/07/2001 (effective from 9/07/2001). The strategic plan called for revision of the current

SELF-EVALUATION REPORT

governance, but this was suspended awaiting law 240/2010, which arrived at the end of 2010, after a period of preparation lasting over two years. Now the process of reform is started.

At the present time, the organs of governance are the Rector, the Academic Senate, the Board of Directors, the Evaluation Committee and the Board of Auditors.

The **Rector** is the legal representative of the Politecnico, and guarantees freedom of research and teaching, freedom of study and the rights of all the employees and students of the Politecnico di Torino. The Rector presides over the Academic Senate and Board of Directors.

The **Pro-Rector** takes the Rector's place in his absence and in the present context handles many matters connected with the internal management of the university, especially with regard to policies relative to human resources.

The Rector is responsible for implementing the guidelines and programme orientations defined by the Academic Senate and achieving the objectives decided by the Council, and avails himself of a **Rector Board** consisting of the Rector, the Pro-Rector and six deputy Vice Rectors (selected from among the top ranking professors at the university). The Rector may assign specific functions to the Vice Rectors to ensure direct supervision of a sector and guarantee the formulation of a coordinated programme of activities in line with the strategic indications of the Academic Senate. The Council may avail itself of the collaboration of work groups made up of experts inside and outside the university.

The **Academic Senate** is the organ of orientation, programming and coordination of the Politecnico for the exercise of the university's autonomy, and it has the task, in particular, of coordinating activities between the didactic and research structures, providing them with guidelines, resolving to activate or suppress didactic and research structures, determining the objective criteria for the distribution of human and financial resources among the didactic, research and service structures, determining the criteria and modes of evaluation of the teaching and scientific activity, identifying lines and sites of application as well as research subjects of particular interest for the university, and implementing actions of support and orientation to research.

The **Council** defines the goals and programmes of the administrative management, and verifies compliance of the results with the orientations expressed.

For resolutions that imply evaluations affecting the didactic and research activities, the Council follows the programme guidelines of the Academic Senate.

The Academic Senate and the Council are, in turn, organized in **permanent committees** that study the proposals under discussion.

The Council, in response to the Rector's proposal, assigns the position of **Administrative Director**, responsible for the activities of administration and the organisation and management of general services.

The **Board of Scientific Directors** is composed by Heads of scientific Department. The Board supports other Organs on questions related to research and technology transfer.

The **Board of Auditors** performs the legal audit of accounts and monitors the university's administrative and management activities.

The By-Laws of the Politecnico di Torino urge systematic evaluation to ensure the correct management of resources, the impartiality and proper performance of the administrative management, and the productivity of scientific research and teaching, also by means of comparative analyses of costs and outputs.

For this purpose, the Board of Directors appoints the members of an internal evaluation structure in accordance with the laws in force (art. 20 of legislative decree no. 29/93, amended by legislative decree no. 470/93, and subsequent art. 5 of law 537/93) called the "**Evaluation Committee**", consisting of five members, at least two of which are appointed from among scholars and experts in the field of evaluation, not necessarily in academic fields, and which operates independently but answers to the organs of governance of the Politecnico di Torino. The Evaluation Committee is required to furnish the information requested to the Ministry of the University and Research, and to the organs that monitor the national public system of evaluation of the quality of universities and research organisations.

POLITECNICO DI TORINO

SELF-EVALUATION REPORT

The university's Evaluation Committee in turn avails itself of the **Joint Didactic Committee** for the periodical acquisition of the enrolled students' opinions of teaching activities. This latter internal committee was created at the university (pursuant to art. 3.1 of the By-Laws) to improve the services provided to the students by the teaching structures operating in the sphere of the right to education.

The tasks of the committee are:

a) to organize and monitor a permanent observatory on the function and validity of the teaching activities;

b) to monitor the process of teaching-learning, observing the methods and effects and proposing specific actions for their improvement;

b) to monitor the actions serving for improvement of the quality of teaching and services to the students, and in support of the right to education;

d) to furnish possible proposals and opinions on the subject of coordination among didactic structures;

e) to submit an annual report on the teaching and services furnished to the students;

f) to perform the function of guarantor with regard to complaints received from students relative to possible situations and behaviours deemed detrimental to their rights.

The Joint Committee for Teaching is composed of an equal number of faculty members (Professors and Researchers) and students elected, respectively, by the faculty and student body, each relative to its own representatives.

The committee appoints a contact person for the guarantee functions, called the "**Student Guarantor**", chosen among the top ranking professors of the university not on the Joint Didactic Committee, charged with the task of receiving any complaints from the students about problems or inappropriate situations, formulating possible proposals for solution or provisions and then reporting them to the Rector for the final decision on the action to be taken.

Today, however the ability to translate results of students' questionnaires into action is still in evolution.

In general, the Politecnico can be considered to have a strong will on the part of the faculty and personnel to participate in decisions involving the university, through their presence on committees and working groups. There is also a strong spirit of collective interest and representativeness.

Below we explained how the current model of government affect decision-making. It is clear that the law 240/2010, introducing the possibility of changing the governance model, gives numerous opportunities to evolve, that may be or not captured by internal committees. Following, it is described the current model of governance in order to evaluate its positive and negative aspects and to acquire suggestions for the new model.

Definition of the university's policies with regard to **RESEARCH AND TECHNOLOGICAL TRANSFER** and decisions relative to them are the responsibility, generally speaking, of the Academic Senate and Board of Directors.

In his second term, the Rector appointed a single **Vice Rector** for Research and Technological Transfer, in order to ensure an effective actions of political orientation to the totality of the scientific activities and valorisation of results. Now the Vice Rector supervises a range of topics that were once handled by the competencies of different elements (Research, Relations with the European Union, Technological Transfer) thus ensuring greater integration and coordination of the strategic choices.

A specific **Senate Committee** entitled **"Strategies for Research"** is in charge of performing a periodical survey of the university's research activities, and prepare specific informative documents to outline the research policy and sources of financing at the regional, national and European Community levels, and monitor the harmonization of research activities between the Departments, Centres and Research Institutes, in collaboration with the other organisations in the area.

The **External Organisations Committee** is a committee of the Council, with members also representing such external organisations as the Chamber of Commerce. Its role is to study the aspects for which the Council is specifically competent, concerned with research and relations with the socio-economic system.

POLITECNICO DI TORINO

SELF-EVALUATION REPORT

To ensure more effective **decisional action**, and overall **simplification of the processes, specific appointments** were made that attributed the decisional power for certain actions directly to the Committee or its coordinator.

In addition, **Technical Committees** devoted to examining and proposing or deciding on specific subjects were created, such as the **Patent Committee** and the **Spin-off Committee.**

The Patent Committee is made up of experts from inside and outside the university, and has the task of proposing, evaluating and deciding relative to patents and, more in general, questions of industrial and intellectual property and the valorisation of research.

The Spin-Off Committee is composed of experts from inside and outside the Politecnico and is charged with evaluating requests to establish companies with a high innovative content, outgrowth of university research, deciding whether the Politecnico should participate in partnership in the spin-off company, perform an annual audit of the spin-off activity and report on it to the Board of Directors.

In the sector of creation of innovative new companies, the university works in close synergy with the **Incubator of Innovative Enterprises**, a company in which the Politecnico participates, founded in 1999, with experience (over 120 companies created and incubated) that has been seen as fundamental for the effective evaluation and selection of the business projects presented to the university by its personnel. It was deemed advisable to valorise the support that can be furnished by the incubator during the definition and programming stages of the project of spin-off creation even more, and more effectively, also through the presence of the Chairman and operating Director of the incubator as members of the committee, in particular in the business planning stage, and in the stage of preliminary evaluation prior to approval of the qualification of spin-off by the organs of the university.

While the organs of the university are competent to define the general guidelines of the strategy and development of research at the university, the **Departments** are the structures best suited to organize one or more sectors of harmonised or similar sectors of research.

The creation of the Departments is resolved by the Academic Senate at the proposal of the researchers interested, after obtaining the approval of the Council relative to the availability of resources, premises and personnel. All the professors and researchers at the university refer, by choice, to one of the university Departments in which they perform their research activity. The main tasks of the Departments are: to promote, coordinate, control and publicise research activities in the sphere of the annual plans approved by the appropriate organs of governance, Director, Council and Department Board; to contribute to the performance of the teaching activity; to perform activities of consultation and research on contract or by agreement, to be carried out within the university.

The Departments, as foreseen by the national legislative framework, enjoy some administrative and financial autonomy within the limits foreseen by the university regulations. Within this administrative autonomy, the Department manages a staff of administrative, technical and library personnel assigned for its operation. Departments may differ significantly in terms of size and resources managed, using the funds assigned, and they are required to approve an annual budget, as well as a financial statement that is part of the general financial statement of the university.

The department structure, as it is the **fulcrum of the university's scientific activities and aggregation of the various research groups' results,** is extremely important for effective implementation of the university's strategic guidelines.

Researchers and research groups receive administrative and management support from the administrative structure of the departments and at the central level. At the level of administration, a specific **Area** has been created, for **"Support to Research and Technological Transfer (SaRTT)"** devoted to supporting and consulting research personnel and the department structure on all matters regarding financed research on competitive projects, financed research for businesses, the valorisation of results and technological transfer.

SELF-EVALUATION REPORT

The university places great attention on structuring supporting services for the research personnel that are adequate for the development and change in the activities and context in which they operate. The SaRTT Area, coherent with the expectations of the Strategic Plan in strategic line 6, requiring *"a strong bond with the institutions, corporations and professions"* has thus been characterised in recent years by a process of continuous change and updating in the range and type of services offered, in order to ensure greater compliance of its activities with the needs of the researchers and other department structures.

For example, in support of contract activity, with particular regard to industrial partners, it has gone from traditional administrative and management support to a more complete alignment of the research personnel in the construction of relations with the enterprises and in the process of identification, definition and subsequent contract stipulation of the complex activities of technological transfer, in order to achieve a more detailed and complete definition of relations with the corporations, and comply with the different strategic lines drawn up by the organs of university governance in a unified and organic manner.

The SaRTT area has in time become characterised as the reference for coordination of all the initiatives that the Politecnico develops to shape the territory as a place of technology and innovation.

With the Rector's approval and in application of the Strategic Plan's lines 1 "A research university at the international level", 4 "The university as a regional network, open towards the city and the region" and 6 "A strong bond with the institutions, business and the professions", starting in 2010 an innovative project was undertaken for the creation of an Innovation Front End (IFE) which should serve to:

- simplify access of the corporations to services of support for innovation through a facilitated channel;

- facilitate "new relationships" between the university's research structures and the business world through actions of "research marketing" to meet the "potential market" that remains unexploited.

As regards support to financed research on competitive projects, coherent with the Strategic Plan's line 1 "A research university at the international level", the SaRTT Area has organized its activities through the creation of two offices charged with supporting participation in competitive bidding for the financing of research activities on the national and regional level as well as on the European level.

The specific activity performed by these two offices consists of furnishing assistance to professors and researchers on the programmes of financing available in the sphere of research and education. It can be of two types, specialising in both the national-regional and the European sector:

general: participation in projects of consultation and anticipation of issues;
- actions of coordination at the regional, national and European level (CoDAU, APRE, CRUI, MIUR, UE, etc.);
- participation in regional, national and European networks and platforms;
- organization of informative/educational events;

specific on projects:
- support in the identification of the most appropriate funding sources with respect to the research activities performed;
- assistance during the project life cycle from conception to the final audit;
- support in the preparation of co-financed proposals during negotiations, in the stipulation of contracts with the financing organisations (EU, MiUR, etc.), in the preparation of the consortium agreements;
- assistance for the administrative and financial management of projects and direct management of projects coordinated by the institute;
- participation in the performance of internal audits and coordination of external audits.

Moreover, starting from the year 2009, additional experimentation is under way with the creation of the **"Committees for support of research activity"**. Their purpose is to participate in financed programmes on unified subjects with a scientific background, which can provide targeted support on areas considered particularly relevant. These activities have already brought results, above all in terms of:

SELF-EVALUATION REPORT

- surveying the activity performed by research groups, scouting project ideas and matching them with financing opportunities
- realising preliminary theme surveys of research activities in certain strategic areas (e.g.: Energy) and preparing a list of scientific references
- assistance in writing proposals and managing projects in the areas of competence
- strengthening networking activities and increasing external visibility of research activities.

The model of governance that the Politecnico di Torino applies attributes the following tasks to the Academic Senate, relative to **TEACHING**: 1) coordinating activities between teaching and research, providing guidelines that take account of the proposals and opinions which may be presented by the Joint Didactic Committee; 2) resolving to activate or suppress didactic and research structures; 3) determining the objective criteria for the distribution of human and financial resources among the didactic structures; 4) determining the criteria and modes of evaluation of the teaching and scientific activity; 5) approving, at the proposal of the teaching structures, the Didactic Regulations of the institute.

The By-Laws, moreover, establish that the management of teaching activities at the Politecnico is mainly handled by the Faculties, Schools and other teaching structures foreseen by university's Didactic Regulations. The Faculties are responsible for preparing the annual offering relative to courses, activating the competitive procedures and calls for tenured professors and researchers to teach them, in close synergy with the Departments (which are devoted mainly to the activities of research but that also contribute to organisation of the teaching activities), preparing part of the Didactic Regulations for the university and providing orientation, coordination and verification of the correct performance of the teaching activities, reporting to the Rector and Academic Senate.

The Faculties, in turn, are divided into Programme Councils, which are in charge of teaching their own programmes (occasionally grouped by uniform areas and in this case we can speak of Educational Area Council) and defining the relative didactic and educational goals, in harmony with the indications and directives of the Faculties to which they belong, as well as:

- proposing to the Faculties the Didactic Regulations for their own programmes;
- approving the teaching plans;
- resolving, in the sphere of the rules and principles established by the Faculty of reference, and coherent with the general standards established by the organs of governance, on the aspects of their pertinence.

Surely in the future this organisation will change: the Law 240/2010 establishes, in fact, the abolition of Faculties and the empowerment of Departments also on teaching.

The Senate also has a **Committee on Strategies for the Educational Offering** that defines the coordination of strategic didactic initiatives.

Starting in mid-2000, within the central administration of the university, a single organising unit called Didactic Management Service was created and charged with handling the initiatives and services, which had been managed by several different structures until then, offered by the institute to the students and teachers, with particular reference to the following:

- secretariat;
- right to education;
- orientation for new students;
- organisation of teaching activities and the relative structuring;
- secretariat of the Faculty Dean;
- post-graduate and research doctorate programmes;
- placement and assistance in entering the job market
- international student mobility (later transferred to the Internationalisation Area);
- distance education;

SELF-EVALUATION REPORT

▪ on-line system of support to didactic services (recently transferred to the Information Technology Area).

In the management of policies relative to **INTERNATIONALISATION** at the university level, the Rector is in the first line of action, flanked by the Vice Rector for International Relations. Together, and later also involving the Organs of Governance, they define the general context, identify actions of expansion and authorise individual operations of internationalisation.

Activities of support (support and reception of outgoing students and reception of foreign citizens, whether students, teachers or researchers) as well as management of international relations, undertaking financed international educational activities and projects of international cooperation, are managed by a central Area for Internationalisation at the university. The Faculties, Departments and School of Doctorate are also involved in reception activities relative to their foreign students and visiting professors/researchers. Support for projects of international research are exclusively managed by this Area.

The decision to centralise it was made due to the conviction that the fragmentation of roles, responsibilities and activities of the individual stakeholders (Lecturers, Departments, Schools, etc.) not included in a global management context would cause them to lose part of their effectiveness, as well as obfuscating the international efforts of the institution. The growth of the system of international relations is a self-propagating phenomenon that generates increasingly expanding dynamics requiring appropriate regulation. By centralising the support, it was also possible to reduce individual efforts thanks to the high degree of specialisation of the operators.

The model used is therefore partially centralised. It is a system organised from the bottom up, in which policies are defined centrally, along with the administrative and support details, while performance of the activity is decentralised. It is a rather complex management model, especially as regards the spread of information in the feedback stages relative to problems. This can cause a quantitative and qualitative deterioration of the efforts made in some cases.

Analysing the model of governance of the institution critically we can identify the following:

▪ Strengths

The model implemented ensures the maximum internal representativeness at all levels with consequent capillary and democratic decisional processes. Within the organs of governance, all the categories of personnel are represented and can participate in the decisional processes relative to teaching, the educational offering, research, technological transfer and organisation of the services.

The fact that centralised Administrative Areas have been established, which are highly competent and specialised on both technical and legal aspects, ensures that the organs assigned to definition of the strategic structures of the educational programmes offered, the priorities in research, teaching and internationalisation, and the structures assigned to engage in contacts with the territory of reference for the analysis of its needs, are flanked by a unified structure that safeguards respect of the legal limitations by the many deciding offices, the independence that characterises the university system, the uniformity and indiscrimination of the services offered to the different sectors (students/teachers), the right to education and information, and the transparency of procedures.

▪ Threats

As regards teaching, the model of governance of the Politecnico at this particularly difficult time for the Italian university system and that of the standards regulating the structure of the educational offering, lends itself to two types of threats: exogenous and endogenous. The legislator has placed many limitations on the teaching proposals that each university can structure, thereby effectively limiting the independence of the university and consequently that of its governing organs that, despite multiple levels of representation with respect to

decisions (as in the case of the Politecnico di Torino), often find themselves involved in a much broader discussion of what is necessary, and forced to channel their considerations within more and more narrow limits. At the endogenous level, on the other hand, it is just the fragmentation of the decisional methods and attribution of similar and sometimes overlapping competence to committees whose members, employees of the university, are elected by the academic, technical and administrative personnel of the institute that can decrease cohesion and the efficiency of the decisional processes.

As regards research, the model foresees interaction, viewed as the **integrating contribution** of different aspects – also of management – **among decisional or advisory bodies with different and specific roles and competencies**: this interaction, while on the one hand it ensures that decisions are made by **groups** with **good representativeness** in examining the choices, on the other, it causes additional **complexity and fragmentation** in the decisional process and monitoring activities, which can lead to governance that is not always adequately incisive and effective.

- Opportunities

The management of the Politecnico is facilitated by the presence of uniform educational areas, which makes it easier at every level or decisional body to identify shared viewpoints and internal cohesion. This is an obvious element of simplification with respect to universities that offer a wide range of programmes with a broad spectrum, passing from philosophy to medicine, for example, or psychology to mathematics. There are only five Faculties at the Politecnico di Torino and they are concentrated on specific sectors of the polytechnical culture: industrial engineering and civil engeneering (1st Faculty of Engineering), ICT (2nd Faculty of Information Engineering), management (4th Faculty of Business Organisation and Management Engineering), Architecture – Design and Construction (1st Faculty of Architecture), architecture and landscape (2nd Faculty of Architecture).

- Weakness

Although the Politecnico di Torino enjoys a very good reputation in qualitative terms with regard to the education and services provided to its students, and the percentage of graduates who declare that they are employed one year after obtaining their degree is high, and the success of research and in fundraising are excellent, the decisional processes that produce such a high level of output are often long and complicated.
The model of governance described above, in its application effectively requires repeated consultation with a multitude of internal and external players, extending the time necessary to perform the processes that lead to the formulation of unitary, uniform, coherent educational proposals. This complexity at the strategic level inevitably causes a risk of delay in implementing the provisions of the organs of governance, and informative asymmetry between the university and its end users.

3. **Section III: Quality assessment practices: How does the institution know it works?**

As we have already seen, the organism established for evaluation in the universities is the Evaluation Committee. The Evaluation Committee of the Politecnico di Torino currently has 5 members, two of which represent foreign universities: The Imperial College of London and the École Polytechnique Fédérale of Lausanne.

POLITECNICO DI TORINO

SELF-EVALUATION REPORT

Over the years, the Committee has performed the required activities of evaluation and, in particular, in 2010 the Committee identified a number of indicators for effective evaluation of the quality of the university's services. These will be used in the near future and will be harmonized with the practices commonly used on the international level.

The choice of the indicators responds to three basic criteria:

- the indicators are particularly relevant and reflect the most significant aspects of the mission of the Politecnico.
- the indicators selected are commonly used at the international level to evaluate the stature of an academic institution; they therefore affect the institution's image.
- the indicators are readily adaptable and can be used to evaluate the Politecnico not only as a whole, but also in each of its main parts.

These indicators belong to 4 main areas:
   a. External financing.
   b. Human resources.
   c. Research.
   d. Education.

a. External financing

They reflect the dynamism of the members of the Politecnico in launching new initiatives and finding the necessary resources, and they also indicate the level of its success in obtaining those resources through directly or indirectly competitive processes.

b. Human resources

They measure the ability of the Politecnico to attract talented people from outside. This ability in turn reflects the image of the institution and its intellectual openness. The specific indicators have to determine its attractiveness on the national and international level.

c. Research

They measure the production of scientific research in quantitative and qualitative terms, the professional results and industrial fallout, according to criteria that are widespread at the international level.

d. Education

They measure the attractiveness of the Politecnico for new generations of students, on the national and international level. They also indicate the qualitative level of teaching activities and the success of graduates on the job market.

The future use of the parameters for each of these areas will follow coherent and statistically reliable procedures. It will concentrate on trend analysis depending on the time and on the comparison with other Italian and foreign institutions at the same level as the Politecnico, or at a higher level.

The Committee also performs an activity of evaluation of the institution's educational offering. In particular, in 2010, the university was engaged in an intense activity of rationalisation and reprogramming of the offering for the academic year 2010/2011 in the sphere of which the Committee was able to provide an important contribution, performing an effective activity of evaluation serving for the rationalisation, establishment and activation of the new educational offering. At the time of its creation, the Committee ascertained whether and to what extent the Programmes complied with the indications of the Ministry, and in particular: the correct

SELF-EVALUATION REPORT

formulation of the proposals, the adequacy and compatibility of the proposals with the teaching resources and structures that the institution could make available for them; the goals of rationalisation and qualification of the educational offering. In this case the Committee carried out an in-depth study to: analyse the strategies and general lines applied by the university for the transformation of its educational offering; determine whether the choices made by the Faculties could ensure synergetic effects among the different programmes established; examine the fundamental features of each programme.

On activation, as required by the Ministry, the Committee was asked to verify that the programmes the university planned to offer for the academic year 2010/2011 possessed all the necessary requisites: transparency, assurance of the quality of the educational processes, structures, teachers, number of students. At that time, the Committee performed detailed quantitative and qualitative studies.

In addition to the activities performed by the Committee, for several years already, the university has applied a process of evaluation of the scientific production of its teaching personnel on the basis of which funds are assigned annually to the Departments. This quantitative evaluation is made through application of bibliometric criteria resolved by the Academic Senate and serving for the evaluation of individuals as well as structures.

The criteria reward production of international interest, measured through verification of the publication of articles in magazines listed in the ISI-Thompson catalogue and, the in case of books, their presence in at least 4 out of 14 prestigious international libraries indicated by the Senate.

The following is a frame of reference for the results of the evaluation process.
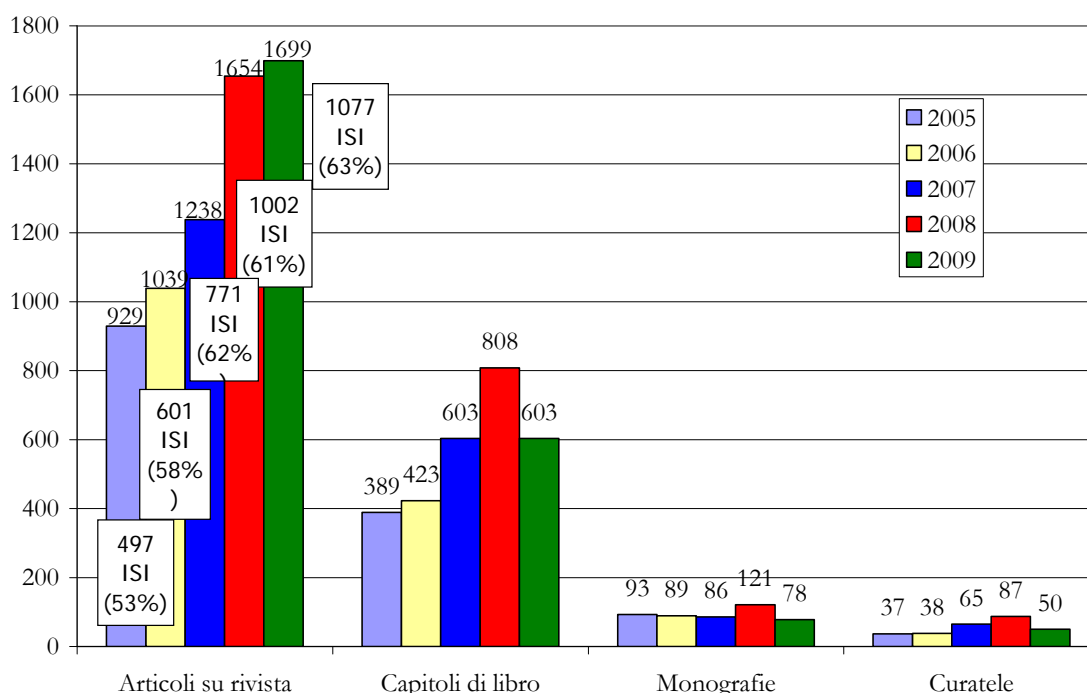
The Politecnico di Torino, starting in 2008, undertook a process of **Internal Quality Assurance** (IQA) with the goal that all the **Programmes** offered for the academic year 2010-2011 would be organised in the light of quality considerations according to the parameters defined by 3 work groups coordinated by the Vice Rector

SELF-EVALUATION REPORT

for Quality: a proces regulating group, a reading and critical revision group of the IQA/teaching regulation sheets for the Programmes, and a support group for drafting the IQA sheets.

In a first stage (November 2008 – March 2009) this process was applied to 8 Programmes, one for each Faculty, chosen by the Dean on the basis of experiences already acquired, serving to create a repertoire of samples for the informative models. In a second stage (May 2009 – October 2009) the repertoire of sample drafts and the expertise acquired by the personnel in support of the IQA was made available for application to the rest of the university programmes. The subject of quality is handled jointly by the Vice Rector for Quality and two Areas of the Administration, one, called the Teaching Management Area, and the other devoted to Information Technology (the IT Area); the contribution of the Area for process integration and IT systems (IPSI Area) was also important during the development stages of the initiative.

The IQA reference model of the Politecnico di Torino is based on the principle of increasing the confidence of the primary stakeholders (students and employers) in the quality of the training obtained, and on equipping the university with an internal instrument that enables it to conceive, plan, implement and evaluate the Programmes for the 1st and 2nd level along three main lines:

External requisites

The specific educational goals of the Programmes and professional opportunities foreseen must be defined in terms of the elements that we want to train and the main functions typically performed by them, i.e., the professional roles and skills for which the graduates are being prepared, taking account of the activity they can perform and the positions they can occupy once they have entered the world of business, at least during the first years of their activity.

Effectiveness

The learning outcomes must be defined using the standard formulation in use in Europe, they must be described in such a way as to facilitate comprehension of the levels of depth that the students are expected to reach and must be coherent with the specific educational goals and professional opportunities taken as reference for the programme project, including any training needs for pursuit of the studies.

In addition, the educational activities must be supported with adequate resources, i.e. teaching personnel, infrastructures (classroom, halls or study rooms, laboratories, libraries) and the surrounding services (information, assistance and support of the students), organised so as to ensure that the expected learning outcomes are effectively reached.

Efficiency

Actions have to be defined to minimise any obstacles to learning, maximising the effectiveness (correct schedules, correct time for individual study, services for support and well-being, orientation and tutoring, internationalisation) and monitor the amount of human and material resources made available, and their cost.

Indicators should be available to monitor the entrance, progress and egress of the students and their successful placement in the business world, with a management system in the sphere of which the responsibilities are clearly defined and all the processes are kept under control.

At the Politecnico di Torino, IQA is rooted on two initiatives implemented at the national and regional level. On the national front there is the project Campus, of which we spoke in the section devoted to the national system of quality assessment, and on the regional front the Piedmont Region (with decree no. 166 of May 25, 2001) has established the accreditation of the Faculties and/or orientation as essential requisites for receipt of public funding for education and orientation through specific guidelines indicated in an Operating Manual for Accreditation of the operating centres. The university therefore undertook a collaboration with the Piedmont Region and the other universities in the region, through a mixed Region/Universities/Industrial Association study group, at the end of which the Operating Manual for Accreditation of the Degree Programme was defined, making it possible to qualify each Programme through an audit of the shared processes deemed essential.

SELF-EVALUATION REPORT

Analysing the system of didactic evaluation we can identify the following:

- Strengths

The Politecnico di Torino has acquired extensive experience in terms of self-evaluation, being one of the first universities in Italy to have applied the Campus project, thus experimenting the effectiveness of the processes of evaluation in the construction of educational programmes whose output can be recognised in terms of the value of the degrees on the job market, the quality of the knowledge acquired, innovative teaching and training methods adequate for the evolution of the system, its students' cultural solidity and approach to issues.

Moreover, the university has participated in many projects at the international level on the subject of IQA, in the sphere of which it has held important positions both for its contribution to the debate and construction of a shared platform on which to base the processes of Internal Quality Assurance, and for its ability to experiment in an almost pioneering manner the instruments and techniques of evaluation, acting often as a bridge between advanced international assessment systems used for many years in other countries, and the "domestic" systems, which still leave much to be done.

- Weaknesses

In spite of long experience and the desire to devote a large quantity of physical and human resources to implementing the processes of self-evaluation of teaching, the institute, like the rest of the Italian university system still has some reservations when it comes to a systematic application of evaluation as a concrete, objective instrument for the construction of its strategies.

Moreover, the strictness and precision with which the university structures and defines the criteria and methods of self-evaluation of its Programmes are not fully met by corrective actions to remedy negative results, or any form of sanctions for those that do not apply corrective measures, while the logic that persists remains merely that of rewarding those who obtain results in line with or superior to the predefined objectives.

- Opportunities

One of the most significant advantages of the mechanisms of self-evaluation of teaching lies in the fact that the organs of governance can increase their ability, through the evaluation, to compare the goals with the results (i.e. fitness for purpose): in other words, this is the ability to establish goals and verify whether and to what extent they can be attained. In this way, every university can analyse the reasons that induce it to offer a programme, the educational goals that it proposes and, after a qualitative and quantitative analysis of the results on the basis of objective criteria also shared with others outside the system, to determine whether and to what extent it may be necessary to redefine the programme, for example in terms of teaching, credits assigned, teaching method used, etc.

While respecting its independence, this enables the university to improve the quality of its teaching, its services to the user, but also to become part of a virtuous cycle that, if well regulated at the territorial and national level, will lead to a general improvement of the level of service by the entire higher educational system.

- Threats

A system of self-evaluation of quality structured in this way, internally and externally, requires the national organisms to have strong powers of connection and orientation – in respect of the independence of the universities – relative to the rules for organising their teaching activities and, above all, for the construction of models of evaluation and the relative quantitative and qualitative indicators, so as to integrate the process of national evaluation with the self-evaluation of the universities and permit comparison of the data at the national level.

SELF-EVALUATION REPORT

Furthermore, the mission of internal evaluation may risk turning into simple compliance with the obligations foreseen by the laws in order to obtain the economic recognition or rewards, thus creating more work at the administrative level without producing effective improvements in teaching and in the processes of education and learning.

Finally, self-evaluation can generate self-referential mechanisms that, if not removed at once, can make it necessary to implement complex information systems targeted at collecting a vast amount of data and information that, starting with their cataloguing and up to their interpretation, are read in a distorted way and with such objectivities as not to allow the system to grasp useful indications for possible corrections.

Regarding the **services and activities performed by the technical and administrative personnel,** recent legislation (Legislative Decree no. 150 of 27/10/2009) introduces a detailed system of measurement and evaluation of the structures and employees of the public administrations, providing for different levels of involvement:

- Committee for the evaluation, transparency and integrity of the public administrations *(Commissione per la valutazione, la trasparenza e l'integrità delle Amministrazioni pubbliche - CIVIT),* that operate independently, at the national level;
- Independent Evaluation Board (*Organismo Indipendente di Valutazione - OIV*), which measures and evaluates each administration as a whole. For the university, until the National Agency for Evaluation of the University and Research (*Agenzia Nazionale per la Valutazione dell'Università e Ricerca - ANVUR*) becomes operational, this function is performed by the Evaluation Committees.
- the organ of political and administrative orientation of each administration;
- The executive positions of each administration.

The system of evaluation outlined provides that every public administration, in terms of self-evaluation, is required to measure and evaluate its individual and overall performance through a special "management performance cycle".

The process described, despite the complexity of the players involved and the procedures/interrelations still not perfectly defined and clear, can represent not only a bureaucratic compliance but also further stimulus to develop a "culture of evaluation" and, above all, of self-evaluation.

Perceptive of the stimulus provided by this law, in 2010 the university participated in a work group composed of several universities for the purpose of self-evaluation of certain aspects relative to management systems: system of management and evaluation of HR and system of organization, planning and control. The outcome of the comparative check-up revealed that our university was one of the five "virtuous" universities, giving it some elements for analysis to better understand and identify the strong and weak points on which to take action to define a more effective development of the organisation.

However, the Politecnico has a greater weakness in formalising instruments for the evaluation of certain skills and performances that are present to a small extent only and that, in any case, even where present, do not evaluate organizational behaviours and competencies but only the attainment of results.

4. **Section IV: Strategic management and capacity for change: How does the institution change in order to improve?**

The Politecnico is a dynamic institution, continuously evolving, attentive to innovation, certain of being a promoter of development in the territory.

The university **TEACHING AND EDUCATIONAL SYSTEM** in Italy has been marked in the last 10 years by profound structural changes deriving from the almost immediate application by the national government of the

SELF-EVALUATION REPORT

indications contained in the Sorbonne Declaration (1998) and in that of Bologna (1999) which identify with certainty, as a system operating on several levels, one of the common features necessary to the new European Space of Higher Education, and have determined that three years is the minimum duration for courses leading to the Bachelor's Degree.

Starting from 1999, following application of Ministry Decree no. 509 of November 3, 1999, degrees issued by Italian universities were divided into two levels, as many European countries had already done: A Bachelor's Degree, obtainable with 180 course credits, and a Master of Science Degree (requiring 120 additional course credits). The universities can also issue University Master's Degrees at the 1st level, obtainable after the Bachelor's Degree, and 2nd level University Master's Degrees, obtainable after the Master of Science Degree (in both cases the degree is issued after acquisition of 60 course credits). The structure of the Research Doctorate remains unchanged, and becomes to all effects a 3rd level degree as it can only be obtained after obtaining the Master of Science Degree.

The programmes, however, do not differ only in the length. The Bachelor's Degree is intended to give the student basic university training as well as those elements of professionalisation that enable the graduate to enter the job market directly. Every graduate must demonstrate knowledge of a foreign language and must have performed additional training activities useful for the best possible employment (communication skills, the ability to work in a group and to use a personal computer). The Master of Science degree completes the student's preparation in the discipline chosen up to a full and independent mastery of the conceptual instruments, to the extent that, unlike the Bachelor's Degree, it concludes with a thesis containing an original text by the candidate for the Master of Science Degree.

The Ministry having prepared all the legislative sources, the universities were able to modify their teaching regulations rapidly, to adapt them to the reform. For all the degrees issued (Bachelor's and Master of Science) and in all the disciplines, this process was completed by the Politecnico di Torino in the academic year 2000/2001.

Five years later, a series of legislative actions, the main one being MD no. 270 of October 22, 2004, significantly amended some of the provisions introduced by MD 509/99, in order to correct certain critical aspects, implement the good practices established and develop lines of action in harmony with the evolution of the European process of reform of higher education. One of the most important changes concerns the complete separation of the Master of Science Decree courses from those of the Bachelor's Degree. While MD 509/99 provided that the former be strictly linked to the latter, with MD 270 the 2nd level degree came to be fully independent, and even the name was changed (to Master's Degree course) while maintaining the two-year duration the same as the previous Specialised Degree course. The purpose of this change was to prompt, within certain limits, a more pervasive acquisition of knowledge, permitting access to a specific course of the Master's Degree for graduates of other types of 1st level courses.

The national scenario of the last decade, and in particular that which has characterised the last five years, has generated a general instability in the system of higher education.

The continuous changes a few years one from the other, and the overlapping of didactic orders whose substantial difference is not easy for the students and their families to understand, with the risk of not permitting them to find immediate relevance among the users and the socio-economic system that could interpret the situation as a sign of uncertainty or lack of transparency, have created problems at the university. However, the choices made at the national level, although they came in rather rapid sequence, were made in a logic of bringing uniformity to the system of university education and the guarantee of a degree that would be equally valid abroad, through mechanisms of shared recognition (ECTS, Diploma Supplement, architecture unitary two-tiers, or bachelor-master type). The 3+2 system (as it is commonly defined) as conceived by the current legislation, if correctly applied, can create opportunities for:

- greater flexibility thanks to the possibility for a graduate to complete a 1st level degree with specialised/master skills in another;
- greater recognisability and marketability of degrees earned at the European level;

SELF-EVALUATION REPORT

- greater diversification of the educational offerings of the universities (more attractive new degrees, addition to traditional degrees of innovative content, degrees destined to train professional elements in short supply in the world, interdisciplinary and transdisciplinary processes, highly professionalised or highly "educational" curricula) with consequent increase in the competition among universities to attract students;
- reduction of the average duration of studies and lowering of the age at which a student in possession of a university degree can approach the job market.

While many Italian universities adapted immediately to the redefinition of the educational offering at the 2nd level, the Politecnico di Torino started to revise its Specialised Degrees at the end of 2007, starting from a definition of standards for the rationalisation and qualification of teaching, according to the Ministry indications, and taking account of the indicators of efficiency, the necessary requisites on the basis of the Ministry indications, any redundancy or shortage of human and logistic resources.

The academic year 2010/2011 marked the end of this process that, however, encountered new obstacles due to the protest of researchers to the uncertainty of their career, settled by the new Law. In Italy, researchers can refuse teaching in order to invest more efforts to the research: in the academic year 2010/2011 for the first time they claimed the respect of this right.

The Politecnico di Torino has therefore recently reorganized its educational offering again, so as to deal with the difficult problem of redesigning the educational processes on the basis of the effective teaching staff available, with a consequent reduction in the number of courses taught, and applying specific procedures in a very short time to recruit the teachers to guarantee coverage of the courses.

In addition to adjusting its educational offering to the new national scenarios, in the last five years the Politecnico di Torino has undertaken highly innovative endogenous actions to hybridise knowledge and computerise teaching and services, constructing a sustainable "green mobile campus" usable and readily accessible by new young "internet natives". The actions that have contributed the most to realisation of the project are:

1. offering programmes completely taught in English, capable of attracting students from all over the world in a more continuous manner (the percentage of foreigners regularly enrolled at the Politecnico di Torino grew from 5.7% to 12.1% over a 3-year period);
2. recording some lessons so that students can watch them again via video streaming by connecting to web platforms for customised learning specially created for them;
3. the creation of a system of access to information services at the university, provided by various offices in the region using a Smart Card; this is a magnetic card with a single chip containing all the student's information and codes to benefit from a number of different services (tuition payments, facilitated meal services, purchase of tickets for the transport system) identical for all the university students in the Piedmont Region;
4. structuring of an e-learning platform ("Poli@Home") that allows students to study and prepare for examinations taking advantage of Internet technologies with the continuous availability on-line of tutoring at Tutori @Home;
5. the expansion of services of the secretariat and the implementation of other initiatives for the students via internet or at self-service stations on campus.

In addition, starting in the academic year 2010/2011, the first year of the engineering programme is the same for all students, regardless of the choices they make later relative to their specialisation. In this way, the

SELF-EVALUATION REPORT

students can acquire the basics of the polytechnical culture without being forced to decide from the time of their registration which programme they are going to enrol in; only after acquiring a certain number of course credits and consolidating their knowledge of the basic elements and gaining some experience of the university teaching methods and greater self-awareness, the student will be asked to choose a specific programme.

Thanks to the uniformity ensured by this process, and also with the view of constructing a "green mobile campus", the university has been able to record all the characterising lessons of the first year of course studies, making them available on the web to the newly enrolled students in order to facilitate their learning and stimulate their attention during the actual face-to-face lesson.

With a view to rationalising the educational processes and using the resources to the best advantage, the Politecnico di Torino has also decided that starting from the academic year 2010/2011, its local campuses in Biella, Ivrea, Mondovì, Vercelli and Verrés will no longer offer 1st and 2nd level programmes, centralising the entire undergraduate teaching activity at the main campus in Turin.

This decision was followed, however, by the implementation of the new educational models that allow the students to follow recorded lessons, individually or collectively, at adequately structured decentralised structures called *SDSS – Strutture Decentrate di Supporto agli Studenti* (Decentralised Student Support Structures) – where they can also take advantage of tutoring by local personnel. These initiatives are, for the moment, operating at the Biella and Verrés campuses and at Scano di Montiferro in Sardinia.

INTERNATIONALISATION is an area for the Politecnico, like the other Italian universities, that has developed in recent years. The results attained, however, have been much better: between 2006 and 2010 the number of foreign students enrolled at various levels tripled, coming to have an impact percentage wise of 12% compared to a national average of less than 3%. During that time, the university trained people capable of managing complex international projects.

The first steps in the field of internationalisation go back to the end of the Eighties and early Nineties, when a number of projects were undertaken; in 2001 the first structured internationalisation project was launched and in 2007 the Central Area for the coordination of internationalisation was created. In these four years a number of initiatives were developed that differentiate the Politecnico significantly from anything the other Italian universities have been able to do: *creation of a system of registration on line with careful monitoring of the quality of registrations, a significant increase in the educational offering in English, the start of operations for the creation of a Politecnico campus abroad, with important economic returns, the increase of opportunities for international exchanges for our administrative and teaching personnel, greater attraction of visiting professors and foreign researchers, expansion of international relations (EU+World) even outside the consolidated networks thanks to participation in numerous partnerships in projects of cooperation like Erasmus Mundus and Tempus, the start of interesting international cooperations with the acquisition of a Europe Aid project for 12 Million of Euro in which Politecnico is the leader* (*EU-China Clean Energy Centre*).

In the future there is the risk that the current situation in the Italian university system, the cuts in financing and the limitations regarding teaching and administrative personnel will create difficulties for the policy of internationalisation, also taking account of the presence of keen foreign competitors that can move in a leaner manner and dispose of greater resources.

The lack of sufficient funds and strategies capable of providing incentives for the administrative personnel makes it more difficult to implement processes of internationalisation, where highly specialised and properly motivated personnel are necessary. The current situation of teaching personnel overloaded with institutional

engagements makes it difficult to plan operations that in any case require further efforts in terms of time and culture.

POLITECNICO DI TORINO

APPENDICES

POLITECNICO DI TORINO

APPENDICES

- *The current Institutional Strategic Plan or preferably, an Executive Summary (in English, if that exists)*

Starting from renewal of its strategies, Politecnico has invested human and economic resources to reinforce its identity and central role in scientific progress and technological innovation.

In 2007 it launched its Strategic Plan, delineating its goals and development guidelines, its vision, its mission and the values that serve as inspiration.

These guiding values aim to make the institution an ever greater school of technology, at the international level, capable of attracting genius, a place of tolerance and multicultural exchange, capable of contributing to the sustainable development of the area. With these guiding values, the orientation of the university is:

a constant striving for leadership in the national and international polytechnical culture, enhancement of its good reputation and ability to compete, the excellence of its higher education and advanced training, scientific research always in the vanguard, promotion of technological transfer, the central role of the human capital and the quality of life at the university, opening toward the city and the region and consolidation of its collaboration within the socio-economic context.

In the title of its Strategic Plan "an international university for the area" we can also see the vision of the institution: a strategy of development that starts from its own region with an outlook on the great international academic institutions, proposing the Politecnico as the vehicle of re-launching, transforming and encouraging the growth of local society as a whole. The university's mission develops along five lines: in addition to its traditional competencies in education and research, it adds technological transfer, services to the area and finance.

A Research University at the international level
1. Valorisation of strategic research sectors
2. Implementation of a policy of support to research.
3. Administrative and management support to research activities
4. Technical and scientific support to research activities
5. Evaluation of the university's research
6. Investment in human capital operating in research
7. Internationalisation of research activities

An advanced educational model
1. Rationalisation of the educational processes for the Bachelor's and Master of Science degrees
2. Qualification of the educational processes for the Bachelor's and Master of Science degrees
3. Strengthening of education at the third level
4. Improvement of connection with the job market
5. Strengthening of services to students and attention to innovative educational models
6. Development of an offering of permanent education and professional updating.

The model of governance
1. Revision of the structures of university governance
2. Harmonisation of relations among didactic structures
3. Independence of the structures of decentralisation and research
4. Revision of the university's administrative organisation

The university as a regional network, open towards the city and the region
1. Strengthening and rationalisation of the campuses in the metropolitan area
2. Redefinition of the roles and functions of the decentralised campuses
3. Creation of university spaces open to the area
4. Valorisation and promotion of the historical identity of the Politecnico

POLITECNICO DI TORINO

APPENDICES

A policy for internationalisation
1. Internationalisation of the educational offering
2. Support to international mobility of the students and professors at the Politecnico
3. Attracting students, PhD candidates and researchers
4. Supporting international cooperation

A strong bond with the institutions, business and professions
1. Promotion of cooperation between the university and enterprise, also through spatial contiguity
2. Definition of educational programs in collaboration with the business, professional and institutional world
3. Improvement of interaction between the university and bridging institutions
4. Safeguarding and valorisation of intellectual property

The central focus on human capital and the quality of life at the university
1. Increasing teaching and research potential
2. Training and qualification of technical-administrative personnel
3. Improvement of the quality of life at the university
4. Requalification and valorisation of university spaces

- *An organisational chart of the institution's faculties (or any other relevant units of teaching/research)*

To manage its research activities, the university is divided into 18 departments that promote and coordinate institutional research activities, organise research activities on commission and provide teachers to the didactic structures.

The departments of the Politecnico are: *DAUIN – Automatica e Informatica* (Automation and Information), *DELEN – Elettronica* (Electronics), *DELET – Ingegneria Elettrica* (Electrical Engineering), *DENER – Energetica* (Energy*), DIASP – Ingegneria Aeronautica e Spaziale* (Aeronautics and Space Engineering), *DICAS – Casa-Città* (Home-City), *DIFIS – Fisica* (Physics), *DIMAT – Matematica* (Mathematics), *DIMEC – Meccanica* (Mechanics), *DINSE – Scienze e Tecniche per i Processi di Insediamento* (Science and Techniques for Settlement Processes), *DIPRADI – Progettazione Architettonica e Disegno Industriale* (Architectural and Industrial Design), *DISET – Ingegneria dei Sistemi Edilizi e Territoriali* (Engineering and Constructions and Territorial Systems), DISMIC – Scienza dei Materiali e Ingegneria Chimica (Science of Materials and Chemical Engineering*), DISPEA – Sistemi di Produzione ed Economia dell'Azienda* (Systems of Production and Business Economics), *DISTR – Ingegneria Strutturale e Geotecnica* (Structural and Geotechnical Engineering), *DITAG – Ingegneria del Territorio dell'Ambiente e delle Geotecnologie* (Engineering of the Territory, the Environment and the Geotechnologies), *DITER – Interateneo Territorio, DITIC – Idraulica, Trasporti ed Infrastrutture Civili* (Hydraulic Engineering, Transport and Civilian Infrastructures). They can also have interuniversity characteristics. The Department bodies are: The Dean, the Council and the Committee.

To organise and manage teaching activities, the Politecnico is divided into 5 Faculties (3 of Engineering and 2 of Architecture) and the Doctorate School.

1. *1st Faculty of Architecture:* located at Valentino Castle, in the city park along the Po River. The 1st Faculty of Architecture of the Politecnico di Torino was created in January 2000, grouping all the competencies typical of architectural and urban design that until then had not been grouped, but divided among different and not organic programs of higher education. The Faculty offers a complete educational process not only in the sector of architecture, but also in that of industrial design.

APPENDICES

2. *2nd Faculty of Architecture:* the particular feature of the 2nd Faculty of Architecture, also known as Architecture and Environment, is its focus on educating a culture of care for the inclusion of the construction in the environment, respecting and valorising the architectural, urban and environmental setting.

3. *1st Faculty of Engineering:* the ability to combine the great tradition of the historical Faculty of Engineering of the Politecnico di Torino, of which it is the natural heir, with the innovative strategy of a Faculty focused on training highly qualified graduates at the international level in a range of productive sectors, with services and professors that characterise the socio-economic situation in Italy and Europe. Its guideline is to train professionals, at the highest level of skill, with the wide range of competencies required by the labour market, offering degrees at the Bachelor's level, Master of Science and post-graduate Master's.

4. *3rd Faculty of Engineering*: the 3rd Faculty of Engineering of the Politecnico di Torino, also known as the Faculty of Information Engineering, is the centre of all the didactic activities inherent to electronics, information technology, telecommunications, telematics, media, automation, mechatronics and physical engineering. It was founded in 1999 and has its headquarters in Turin. To serve the needs of local communities, part of the teaching is managed and performed at the campuses of Mondovì, Verrès and Alessandria.

5. *4th Faculty of Engineering*: The 4th Faculty of Engineering was created in 2002 as a continuation of the experience acquired by the Politecnica's *"Vilfredo Pareto"* School of Economics and Organisation. The Faculty, like the one that preceded it, prepares professionals linked to the sector of Management Engineering. The teaching staff consists of 55 professors including engineers, economists and management experts, who are very active in the scientific community and have considerable experience in teaching. The Management Engineer is a professional endowed with technological, economic and managerial skills, able to understand the complexity of the factors that ensure the competitiveness of businesses and contribute to their growth.

6. *Doctorate School*: the Doctorate School at the Politecnico di Torino builds on a strong basic preparation and broad, multidisciplinary general culture, with a strong sensitivity to the more advanced aspects of research and innovation.

The Politecnico di Torino held the first year of the new university order as early as the academic year 1999/2000, introducing the system of course credits as the study load for the students and reorganising the teaching of its courses on two levels: Bachelor's Degree (3 years, 180 course credits, and a Master of Science Degree (2 more years and 120 additional course credits).

- *An organisational chart of the central administration and support services (rector's office staff, libraries etc.)*

The administrative structure of the Politecnico di Torino is organised in units in support of the different organs of governance.

1. Organisation units in support of the Rector

PREP - Ufficio Prevenzione e Protezione (Office of Prevention and Protection)
CORE - Ufficio Comunicazione e Relazioni con l'Esterno (Communications and Public Relations Office)

2. Organisation unit in support of the Administration

ALEG - Area Affari Legali (Legal Affairs Area)
IPSI - Area Integrazione Processi e Sistemi Informativi (Process Integration and Information Systems Area)
SISTI - Servizio Supporti Istituzionali (Institutional Support Service)

3. Online organisation unit

GESD - Area Gestione Didattica (Didactic Management Area)

POLITECNICO DI TORINO

APPENDICES

INTE - Area Internazionalizzazione (Internationalisation Area)

PAF - Area Pianificazione, Amministrazione e Finanza (Planning, Administration and Finance Area

TEP - Area Trattamenti Economici e Previdenziali (Salary and Social Security Area)

SARTT - Area Supporto alla Ricerca e al Trasferimento Tecnologico (Research and Technological Transfer Support Area)

RUO - Area Risorse Umane e Organizzazione (Human Resources and Organisation)

EDILOG - Area Edilizia e Logistica (Construction and Logistics Area)

IT - Area Information Technology (Information Technology Area)

PSA - Area Politiche e Strategie di Acquisto (Purchase Policies and Strategies Area)

COPA - Area Contrattazione Passiva (Passive Contracting Area)

POLITECNICO DI TORINO
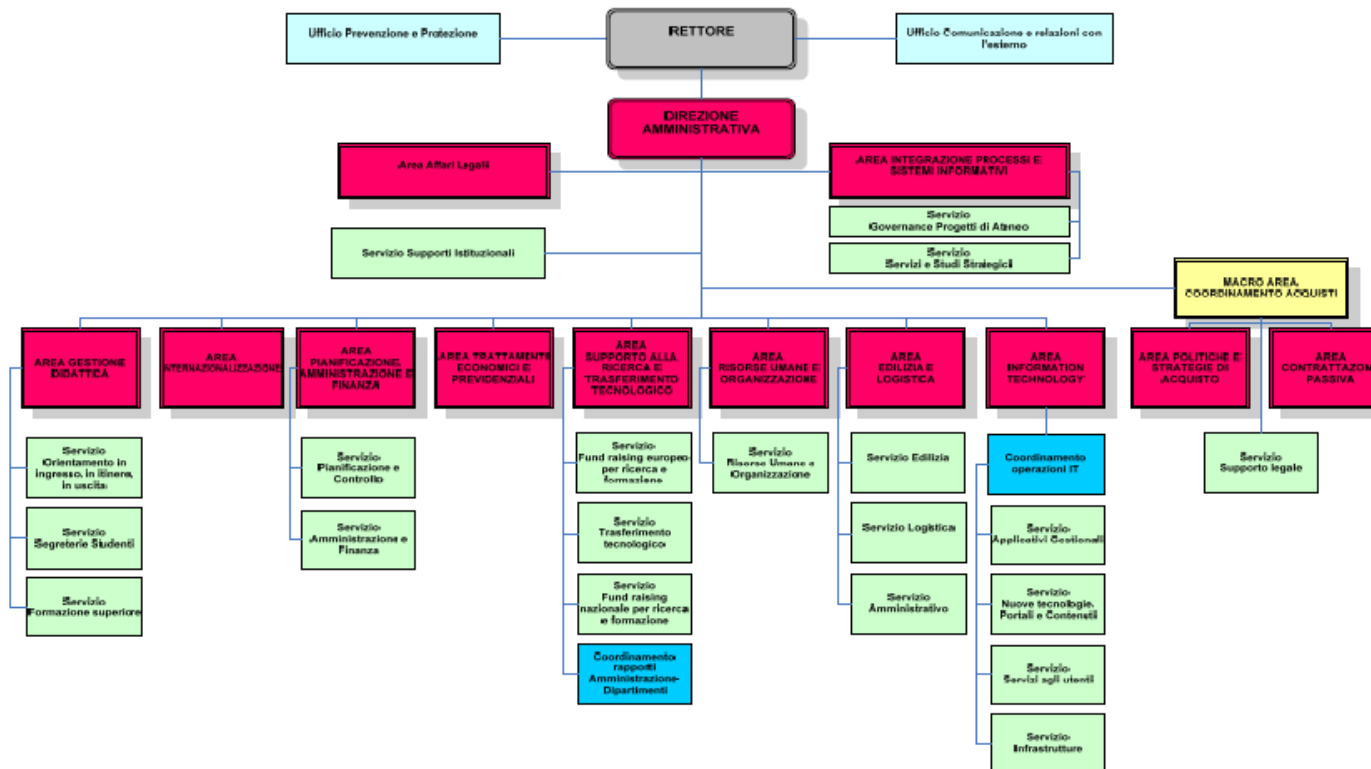
APPENDICES

APPENDICES

- *An organisational chart of the management structure (rector, council/senate, faculty deans and councils, major committees, etc.)*

According to the By-Laws, the Bodies of Governance of the Politecnico are:
- The **Rector,** who represents the Politecnico to all effects of the law and guarantees freedom of research and teaching, freedom of education and the rights of all the employees and students of the Politecnico di Torino.
- The **Academic Senate,** which is the organ in charge of orientation, programming and coordination of the Politecnico for the exercise of university independence. In this sense, it processes the program indications for preparation of the budget and furnishes program indications to the Politecnico structures for the preparation of their respective plans of activities.
- The **Board of Directors,** which defines goals and programs for the administrative management and monitors the correspondence of the results with the orientations imparted.

The Rector appoints the **Pro-Rector** and assigns functions to the Vice Rectors and Rector Referrals. He consults with the University Committee.
The Board of Directors, at the proposal of the Rector, appoints a **Managing Director**.
The main committees are the following:
- **Educational Offering Strategies Committee,** with analytic functions, reporting to the Senate and coordinated by the Rector/Pro-Rector.
- **Research Strategies Committee,** with analytic functions, reporting to the Senate on research matters.
- **AS/BoD Committee for Human Resources,** with analytic functions, reporting to the Organs of Governance and coordinated by the Pro-Rector.

There are also special committees such as:
- **Committee for Programming and Sustainability of the Development Processes**
- **The External Bodies committee**
- **Contributions, Services and Design committee for students, cultural activities and processes of integration**
- **Programs and Projects for Settlements**

- *Student numbers for the whole institution, with a breakdown by faculty, over the last three to five years; student/staff ratio (lowest, highest and mean ratios); time-to-graduation; drop-out rates; gender distribution by faculty; demographic trends in the wider target population*

POLITECNICO DI TORINO

APPENDICES

Enrolments at the Politecnico di Torino

Type of course	Enrolment in 2009/10
1st level Program	17,281
1st level Program online	1,773
2nd level Program	7,469
Old Order courses	1,048
Individual teaching	614
School of specialisation	32
Doctorate school	751
1st level Master	73
2nd level Master	226
Total	**29,267**

In the last five years enrolments[1] in courses at the 1st and 2nd level of the Politecnico di Torino increased totally by 23% (from 21,488 to 26,523) showing steady growth that in the last few years has been around +6%.

From the academic year 2005/06 enrolments increased by 14% for 1st level degrees and 69% for 2nd level degrees. 65% of the students enrolled attend courses for the 1st level degree and 28% for the 2nd level. The remaining 7% take 1st level degree courses in distance-learning mode.

The breakdown by Faculty shows that 46.6% of the students are taking courses at the 1st Faculty of Engineering, 18% at the 3rd Faculty of Engineering, 10% at the 4th Faculty of Engineering and the remaining 26% at the two Faculties of Architecture.

The 2nd Faculty of Engineering at Vercelli was discontinued but this did not cause any reduction in terms of enrolments, as the students who formerly made use of the separate facility (4% of the total students), were completely absorbed this year by the 1st and 3rd Faculties of Engineering, that increased their enrolments by 3.5% and 2%, respectively in 2009/10.

About 30% of the students currently attending the Politecnico are women, and this value has remained constant over the years, with a slightly higher average for the 2nd level courses; this probably indicates that women are more likely to continue their studies.

With regard to age, 56.5% of the students in the 1st level degree courses are between 19 and 22, 24% are between 23 and 25 and the remaining 19.5% are over 26. 42% of the students in the 2nd level degree courses are under 25, 45% are between 25 and 27 and the remaining 13% are over 27.

As regards dropouts, in general the dropout rate in the Italian university system remains high, according to the experts, due to the absence of mechanisms of selection before enrolment. At the Politecnico di Torino the dropout rate between the first and second year of the course is 18%, in line with the national figure, while in courses of the old order the percentage was 25%. The introduction of the reform of educational order has certainly contributed to improve the university's performance.

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[1] The enrolment data refer to the academic year 2008/09 and not 2009/10 as to date the enrolment for the academic year 2009/10 cannot take account of the total enrolments in the 2nd level degree courses.

POLITECNICO DI TORINO

APPENDICES

Enrolments by type of course, academic year 2005/06-2009/10
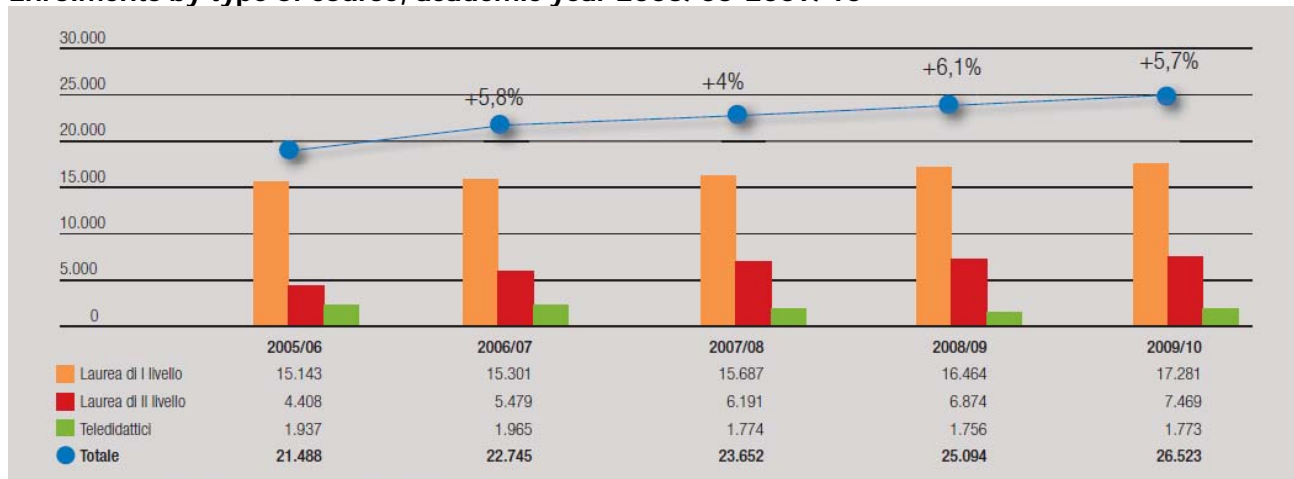
	2005/06	2006/07	2007/08	2008/09	2009/10
Laurea di I livello	15.143	15.301	15.687	16.464	17.281
Laurea di II livello	4.408	5.479	6.191	6.874	7.469
Teledidattici	1.937	1.965	1.774	1.756	1.773
Totale	21.488	22.745	23.652	25.094	26.523

Source: Process Integration and Information Systems Area – IPSI, data as of October 5, 2010

Enrolment by Faculty and type of course, academic year 2009/10

Facoltà	I livello	I livello Teledidattici	II livello	Totale	Totale %
I Architettura	2.654	-	530	3.184	12,0
II Architettura	2.369	-	1.218	3.587	13,5
I Ingegneria	8.414	748	3.203	12.365	46,6
III Ingegneria	2.452	759	1.644	4.855	8,3
IV Ingegneria	1.392	266	874	2.532	9,5
Totale	17.281	1.773	7.469	26.523	100,0

Source: Process Integration and Information Systems Area – IPSI, data as of October 5, 2010

Female enrolments, academic year 2009/10

	1st level	2nd level
Politecnico	27%	30%
National	26%	29%
	Architecture	**Engineering**
Politecnico	52%	20%
National	52%	21%

Source: Process Integration and Information Systems Area – IPSI, data as of October 5, 2010

Graduates

In the last ten years, the number of graduates has increased steadily: from 1999 to 2009 it almost doubled: from 2,568 to 4,546 graduates (+77%).

APPENDICES

These numbers reflect the massive access to the university that was prompted by the reform of the educational orders, dividing the degree programs into two levels and increasing the number of degrees, while at the same time facilitating the passage of students from the courses of the old order to the new through recognition of the credits they had already acquired.

With respect to the national scene, Piedmont has a distribution of graduates by type of course more extensively oriented toward the courses of the new order; this is due to the fact that the Politecnico decided to anticipate by a year (starting in 2000/01), the application of the reform.

Until 2004 the most widespread degree was the five-year degree with 2,335 graduates, starting in 2005 the 1st level graduates (2,270) exceeded those of the old order (1,904), and in the last two years even the number of 2nd level graduates is gaining considerable consistency and in 2009 totalled almost 2,000 students.

The number of 1st level graduates has not changed greatly with respect to the number of graduates in the old order; this is a further confirmation of the fact that the increase in the number of graduates depends more than any thing else on the doubling of the degrees.

As regards graduating age, Italian graduates have always been among the "oldest" in Europe. With the reform of the educational orders, considerable progress has been made: comparing the age of graduates under the old order with that of graduates at the 2nd level it can be seen that while no graduate obtained a degree before the age of 24, the number of graduates at the 2nd level in this age range is steadily growing (37% in 2009).

As regards the number of women graduates, the Politecnico is in line with the national data that shows a slight but constant increase for the Engineering area (from 18% in 2004 to 20% in 2008) and a slight decrease (54% compared to 58% in 2008) for the Architecture area (54% at the national level).

Graduates in the old and new order by calendar year, 1999 - 2009

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Laurea vecchio ordinamento	2.568	2.707	2.651	2.636	2.512	2.335	1.904	1.005	451	276	162
Laurea nuovo ordinamento	-	-	-	515	1.343	2.005	2.769	3.522	3.855	4.057	4.384
di cui I livello	-	-	-	515	1.338	1.881	2.270	2.377	2.370	2.339	2.427
di cui II livello	-	-	-	-	5	124	499	1.145	1.485	1.718	1.957
Totale laureati	**2.568**	**2.707**	**2.651**	**3.151**	**3.855**	**4.340**	**4.673**	**4.527**	**4.306**	**4.333**	**4.546**

Source: Process Integration and Information Systems Area – IPSI, data as of October 5, 2010

APPENDICES

Graduates according to the old order and 2nd level by age group, 2005 - 2009
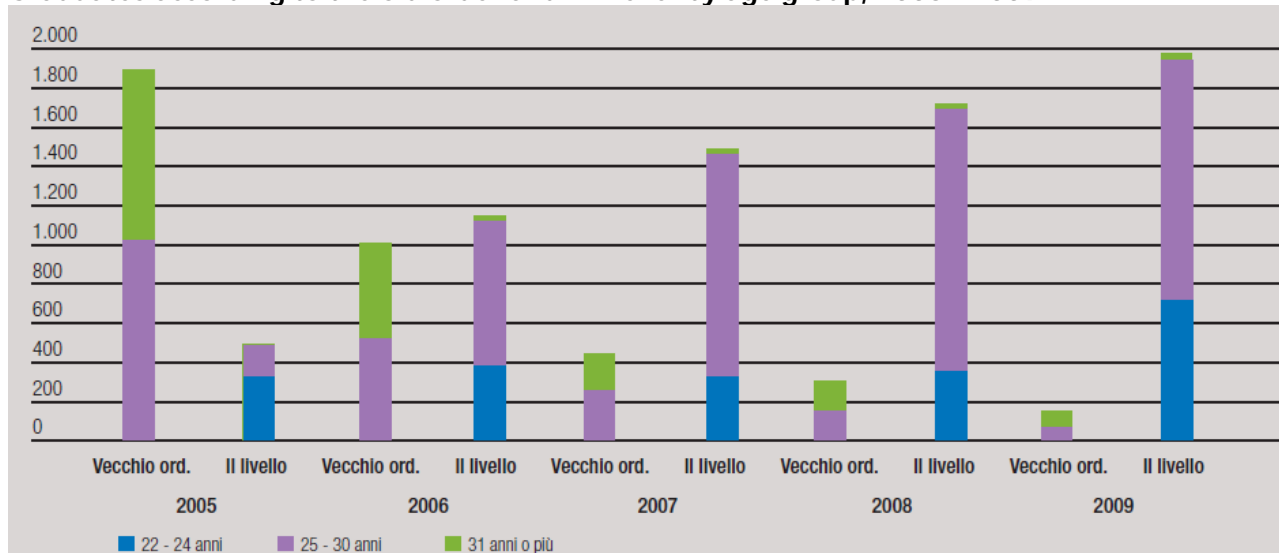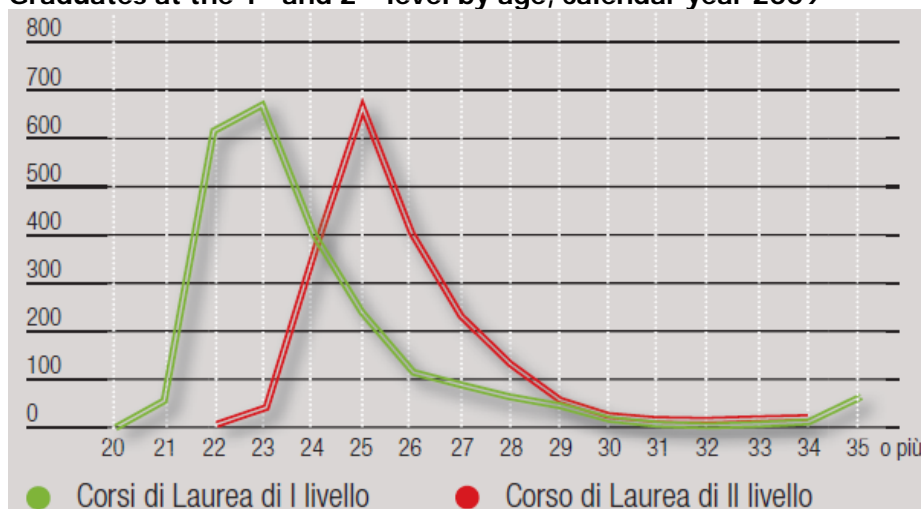

Source: Process Integration and Information Systems Area – IPSI, data as of October 5, 2010

Graduates at the 1st and 2nd level by age, calendar year 2009

Source: Process Integration and Information Systems Area – IPSI, data as of October 5, 2010

Enrolments in Piedmont and in Italy

In spite of the demographic decline, the number of enrolments at the national level has increased by 20% in the last ten years: form 247,789 enrolled in 1998/99 to 295,961 in 2008/09.

From 1999 to 2009 in Piedmont the number of enrolments increased by 44%. The current student population of Piedmont is 6% of the national system (5% in 1999).

In recent years enrolments at the Politecnico di Torino increased by 70%: from 2,388 in 1999 to 4,067 in 2009. The university accounts for 24% of enrolments in the Piedmont higher education system.

The increasing data give the impression that the mass access to higher education has succeeded in offsetting the reduction in the number of 19-year-olds and high school graduates.

APPENDICES

After the consistent decrease in population recorded in recent years, in 2007 (most recent year of Istat data) there was an effective recovery of 19-year-olds, partly due to immigration.
The increasing trend of 19-year-old high school graduates is flanked in Piedmont by a good level of "participation in studies".
The particularly positive result for the Politecnico is mainly due to the number of foreign enrolments and students from outside the region, as well as to the "second generation" of foreign students. Also for the future, internationalisation and regional mobility will be decisive factors to ensure the continuous growth of enrolments.

Students enrolled in Piedmont universities, academic year 2004/05 – 2008/09

Ateneo	2004/05	2005/06	2006/07	2007/08	2008/09
Università di Torino	11.473	10.815	10.940	12.114	11.003
Politecnico di Torino	3.552	3.813	3.911	3.943	4.067
Piemonte Orientale	2.040	1.937	1.637	1.797	1.713
Scienze Gastronomiche	50	52	52	56	53
Piemonte	17.115	16.617	16.540	17.910	16.836
Italia	331.893	324.184	308.185	306.722	295.961

Fonte: MIUR- Ufficio di statistica, ISTAT.

Gli immatricolati sono quelli al 31 luglio dell'anno successivo, in regola con il pagamento della seconda rata delle tasse.

Historical series 19-year-olds, high school graduates in Piedmont enrolled at the Politecnico di Torino, projection of Piedmont 19-year-olds

Fonte: MIUR- Ufficio di statistica, ISTAT.

- *Academic staff numbers (by academic rank and faculty) for the whole institution, over the last three to five years, with a breakdown by level, discipline, gender and age*

With the programming of the teaching and research personnel from 2006 to 2009 the university chose to focus its attention on a number of aspects:

APPENDICES

- accelerated rejuvenation of its teaching staff, through the planning in different scientific areas of actions in favour of the generational turnover, so as to lower the average age and increase the potential energy;
- addition of new researchers;
- attraction from outside the university of personalities considered authoritative, so as to significantly strengthen the research potential in scientific sectors deemed strategic;
- creation of adequate opportunities for the growth of the Researchers and Professors in service.

Many of the resources available in the four-year period (about 50%) increased also thanks to agreements of partnership with outside companies and enterprises that made room for contract chairs assigned to research positions. The remaining 50% of the resources are earmarked for promotion in their career toward positions of Associate or Full Professor.

A look at the numbers reveals that teaching and research staff have decreased considerably since 2009: this is due to the large number of retirements and failure to fill new positions in the 1st and 2nd levels, of which the 81 allocated in the 1st session of 2008, will terminate by the end of 2010, like those for researchers, allocated in 2009.

The number of foreign teachers increased slightly form 2004 to 2008 from 0.81% to 1.15%.

The total number of women on the teaching staff remains low, though it has increased steadily in the last several years, from 21.68% in 2004 to 23.25% in 2009.
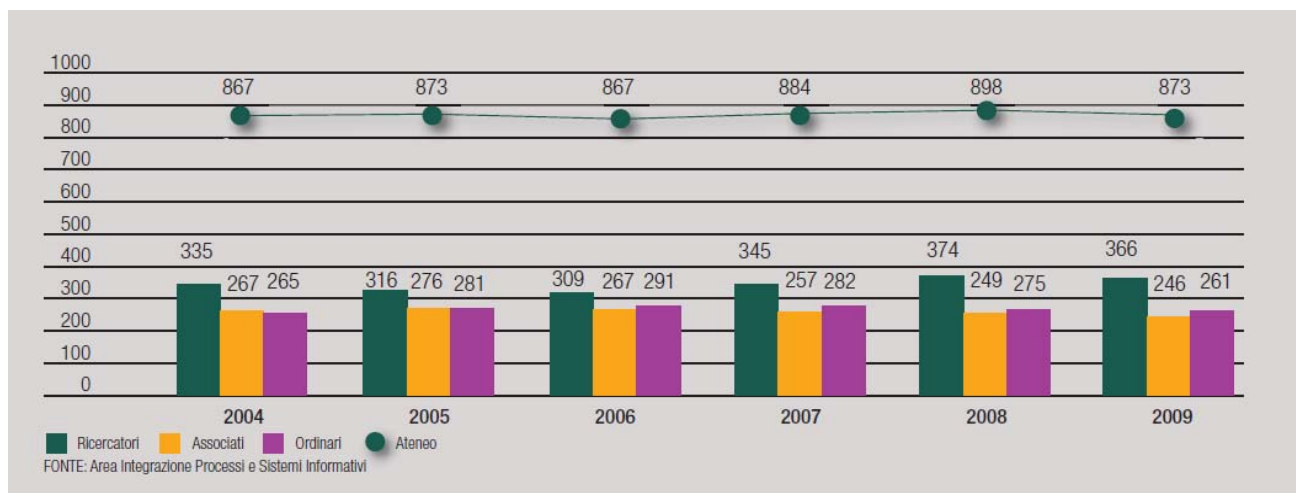
POLITECNICO DI TORINO

APPENDICES

Professors and Researchers by Faculty – progress 2004, 2009

	FACULTY	Researchers	Associates	Full Prof.	Grand total
Dec.31-04	I FACULTY OF ARCHITECTURE	38	30	20	88
	II FACULTY OF ARCHITECTURE	51	34	24	109
	I FACULTY OF ENGINEERING	151	115	128	394
	II FACULTY OF ENGINEERING – at VERCELLI	27	20	24	71
	III FACULTY OF ENGINEERING	58	41	56	155
	IV FACULTY OF ENGINEERING	10	27	13	50
Dec. 31-04 Total		335	267	265	867
Dec. 31-05	I FACULTY OF ARCHITECTURE	34	30	24	88
	II FACULTY OF ARCHITECTURE	44	29	28	101
	I FACULTY OF ENGINEERING	147	127	132	406
	II FACULTY OF ENGINEERING – at VERCELLI	26	20	26	72
	III FACULTY OF ENGINEERING	51	47	56	154
	IV FACULTY OF ENGINEERING	14	23	15	52
Dec. 31-05 Total		316	276	281	873
Dec. 31-06	I FACULTY OF ARCHITECTURE	31	29	25	85
	II FACULTY OF ARCHITECTURE	41	31	26	98
	I FACULTY OF ENGINEERING	142	122	139	403
	II FACULTY OF ENGINEERING – at VERCELLI	24	19	26	69
	III FACULTY OF ENGINEERING	52	46	58	156
	IV FACULTY OF ENGINEERING	19	20	17	56
Dec. 31-06 Total		309	267	291	867
Dec. 31-07	I FACULTY OF ARCHITECTURE	36	27	25	88
	II FACULTY OF ARCHITECTURE	45	30	25	100
	I FACULTY OF ENGINEERING	159	117	134	410
	II FACULTY OF ENGINEERING – at VERCELLI	24	19	25	68
	III FACULTY OF ENGINEERING	58	45	58	161
	IV FACULTY OF ENGINEERING	23	19	15	57
Dec. 31-07 Total		345	257	282	884
Dec. 31-08	I FACULTY OF ARCHITECTURE	35	26	25	86
	II FACULTY OF ARCHITECTURE	50	28	25	103
	I FACULTY OF ENGINEERING	177	112	131	420
	II FACULTY OF ENGINEERING – at VERCELLI	25	19	23	67
	III FACULTY OF ENGINEERING	62	46	56	164
	IV FACULTY OF ENGINEERING	25	18	15	58
Dec. 31-08 Total		374	249	275	898
Dec. 31-09	I FACULTY OF ARCHITECTURE	33	25	24	82
	II FACULTY OF ARCHITECTURE	48	27	23	98
	I FACULTY OF ENGINEERING	174	111	124	409
	II FACULTY OF ENGINEERING – at VERCELLI	24	19	22	65
	III FACULTY OF ENGINEERING	62	46	53	161

APPENDICES

	IV FACULTY OF ENGINEERING	25	18	15	58
Dec. 31-09 Total		366	246	261	873

Progress of Teaching and Research personnel at the University by Qualification

FONTE: Area Integrazione Processi e Sistemi Informativi

Professors and Researchers by gender

FONTE: Area Integrazione Processi e Sistemi Informativi
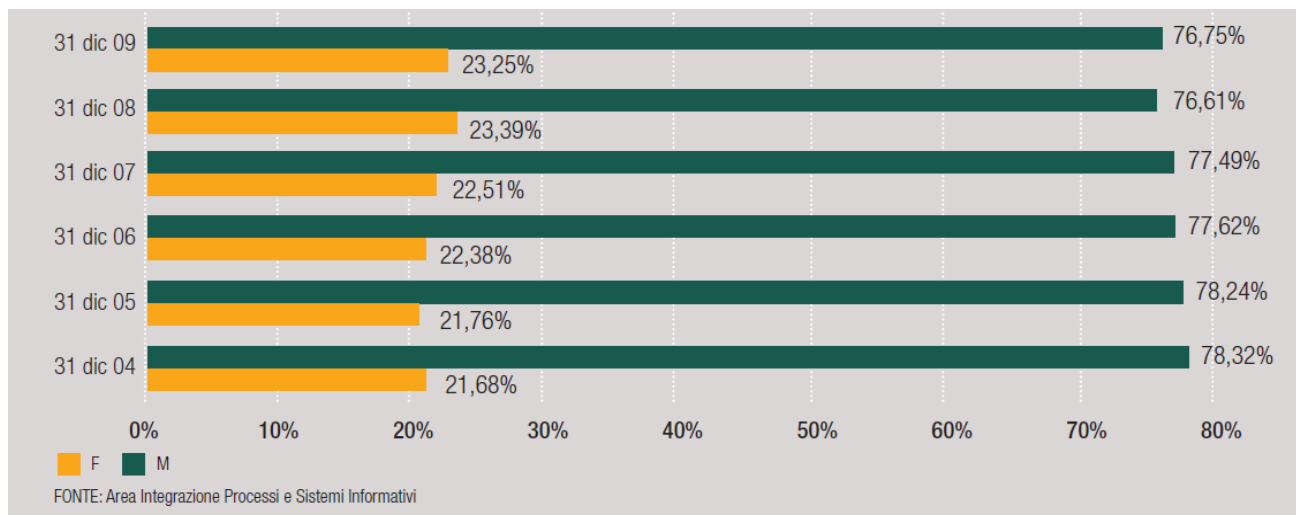
Average age of Professors and Researchers

POLITECNICO DI TORINO

APPENDICES

FONTE: Area Integrazione Processi e Sistemi Informativi
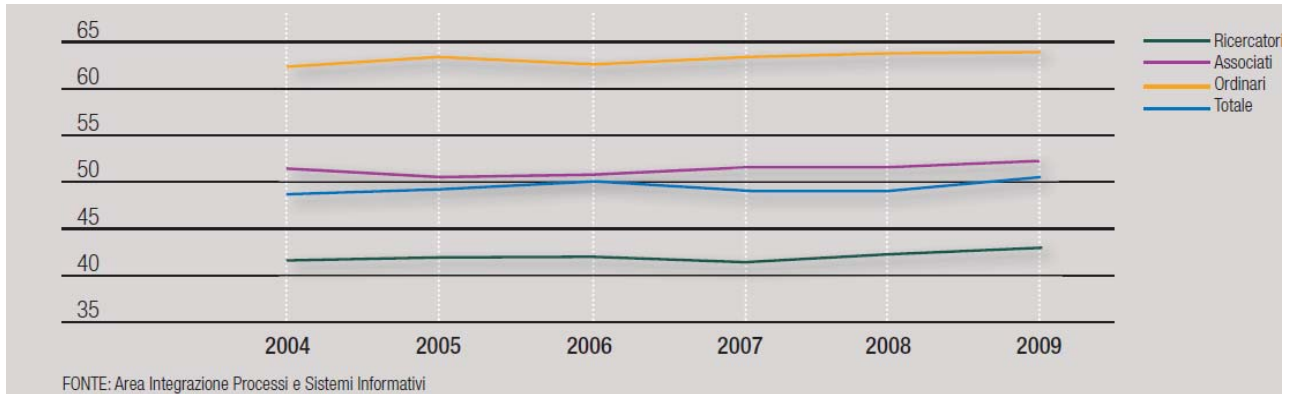
Distribution by age group of Professors and Researchers
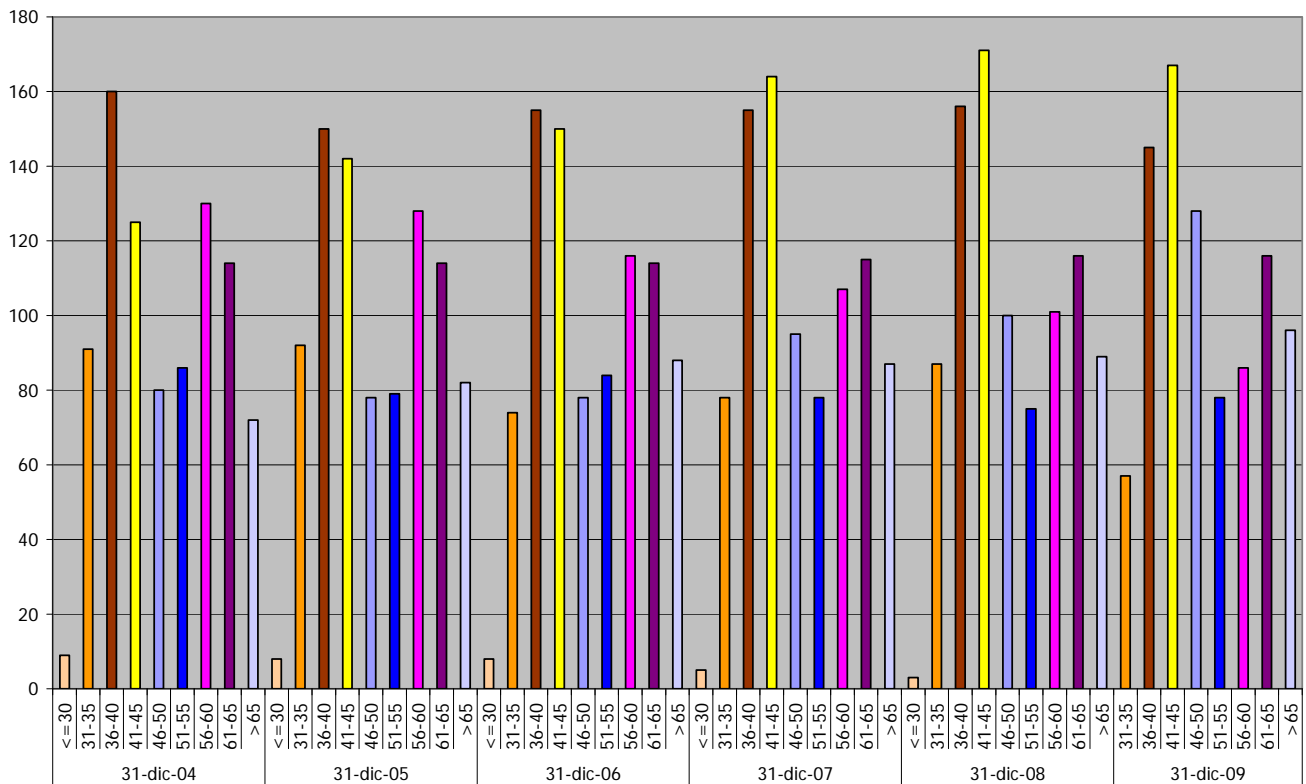
Source: Process Integration and Information Systems Area

POLITECNICO DI TORINO

APPENDICES

Professors and Researchers divided by scientific disciplinary sectors (as at 31/12/2009)

SCIENTIFIC DISCIPLINARY SECTOR		Total
BIO/07	Ecology	4
CHIM/04	Industrial chemistry	1
CHIM/07	Chemical foundations of technologies	14
FIS/01	Experimental physics	18
FIS/02	Theoretical physics, mathematical models and methods	10
FIS/03	Physics of matter	17
FIS/04	Nuclear and subnuclear physics	2
GEO/05	Applied geology	6
GEO/09	Mineral georesources and mineralogical-petrographic applications for the environment and cultural assets	1
GEO/11	Applied geophysics	3
ICAR/01	Hydraulics	9
ICAR/02	Hydraulic and maritime constructions and hydrology	4
ICAR/03	Sanitary-envirnomental engineering	5
ICAR/04	Roads, railroads and airports	6
ICAR/05	Transport	5
ICAR/06	Topography and cartography	8
ICAR/07	Geotechnology	15
ICAR/08	Construction sciences	20
ICAR/09	Construction technology	21
ICAR/10	Technical architecture	11
ICAR/11	Building production	3
ICAR/12	Technology of architecture	21
ICAR/13	Industrial design	7
ICAR/14	Architectural and urban composition	31
ICAR/15	Architecture of the landscape	1
ICAR/16	Architecture of interiors and interior design	2
ICAR/17	Design	19
ICAR/18	History of architecture	22
ICAR/19	Restoration	12
ICAR/20	Technology and urban planning	9
ICAR/21	Urban planning	14
ICAR/22	Surveying	11
ING-IND/03	Mechanics of flight	6
ING-IND/04	Aerospatial constructions and structures	8
ING-IND/05	Aerospatial installations and systems	4
ING-IND/06	Fluid dynamics	10
NG-IND/07	Aerospatial propulsion	5
ING-IND/08	Fluid machines	16
ING-IND/09	Systems for energy and the environment	1
ING-IND/10	Industrial technical physics	17
ING-IND/11	Environmental technical physics	13

APPENDICES

ING-IND/12	Mechanical and thermal measurements	1
ING-IND/13	Mechanics applied to machines	27
ING-IND/14	Mechanical design and machine construction	25
ING-IND/15	Design and methods of industrial engineering	8
ING-IND/16	Processing systems and technologies	21
ING-IND/17	Industrial mechanical installations	7
ING-IND/18	Physics of nuclear reactors	3

ING-IND/19	Nuclear installations	11
ING-IND/21	Metallurgy	10
ING-IND/22	Science and technology of materials	18
ING-IND/23	Applied chemistry-physics	3
ING-IND/24	Principles of chemical engineering	8
ING-IND/25	Chemical plants	8
ING-IND/26	Theory of the development of chemical processes	2
ING-IND/27	Industrial chemistry and technology	6
ING-IND/28	Engineering and safety of excavations	8
ING-IND/29	Engineering of raw materials	2
ING-IND/30	Hydrocarbons and underground fluids	5
ING-IND/31	Electrotechnology	16
ING-IND/32	Converters, machines and electric drivers	15
ING-IND/33	Electrical systems for energy	10
ING-IND/34	Industrial bioengineering	4
ING-IND/35	Economic-managerial engineering	11
ING-INF/01	Electronics	31
ING-INF/02	Electromagnetic fields	14
ING-INF/03	Telecommunications	28
ING-INF/04	Automation	18
ING-INF/05	Data processing systems	45
ING-INF/06	Electronic bioengineering and information technology	5
ING-INF/07	Electric and electronic measurement	11
IUS/04	Business law	2
MAT/01	Mathematical logic	1
MAT/03	Geometry	15
MAT/05	Mathematical analysis	19
MAT/06	Probability and mathematical statistics	4
MAT/07	Mathematical physics	10
MAT/08	Numerical analysis	8
MAT/09	Operating research	4
M-DEA/01	Demoethnoanthropological disciplines	1
M-GGR/01	Geography	2
M-GGR/02	Economic and political geography	1
M-STO/05	History of science and technology	1
M-STO/08	Archivism, bibliography and biblioteconomy	2

APPENDICES

SECS-P/06	Applied economics	1
SECS-P/07	Business economics	1
SECS-S/01	Statistics	3
SPS/07	General sociology	1
SPS/08	Sociology of cultural and communicative processes	1
SPS/10	Sociology of the environment and territory	2

- *Funding: government funding (amount and percentage of total budget), other funding sources (type and percentage of total budget) and research funding (percentage within total budget); amount of institutional funding for teaching and research per faculty over the last three to five years*

In 2009 the activity on the financial front, with regard to research, teaching and technological transfer highlights the expansion of the Politecnico di Torino and its increased visibility in the country and abroad.

These results are attributable to the pursuit of the strategic priorities defined in the Strategic Plan approved in 2007.

The annual financial statement shows income without clearing entries for 263 Million, down 6.6% compared to 2008, mainly due to fewer loans for building and related expenses.

Excluding income for building, the resources available to the university for 2010 amount to 243 Million. Some of the income received during the year is allocated to projects covering several years: the expenditures without clearing entries totalled about 256 Million, generating a surplus for the year of about 6.5 Million which is almost entirely allocated.

The Politecnico maintains its traditional good fundraising capacity for research. The Departments are able to stipulate many contracts with institutional and business partners.

In 2008 the total income allocated to projects and activities on commission reported in the financial statement was € 68,278,735 thanks above all to research projects financed by the region and local organization, as well as projects of a strictly commercial nature that increased by 19% over the previous year (for a total of about 2 Million to be added to the 3 Million euro growth reported between 2007 and 2008). These data are particularly significant in the light of the national and international context of economic crisis that has significantly involved many of the industrial partners of the Politecnico.

Although operating costs increased sharply, especially in the sectors connected with services to the students (+8.76%), actions for research (+10.20%) and salaries and services to the personnel (+1.2%), financial costs and taxes, as well as repayment of loans, there was an increase in unallocated income of 2.09% in tuition by effect of the success of the enrolment campaign, and the Ordinary Finance Fund grew by 6.25% thanks to the good position of the university with respect to the evaluation parameters.

From the financial viewpoint, the Politecnico exhibits a healthy situation. The ratio of Fixed Assignments/Ordinary Finance Fund (OFF) in 2009 was 78.26% (which rises to 82.14% if we consider the pure calculation of the indicator i.e. without agreements and without deduction of the salary increases); the indebtedness consequent to the expansion of the Cittadella Politecnica for a residual amount as of December 31, 2009 of about 90 Million, but against a real estate equity having a value of over 490 Million (of which 56 Million still to be completed), almost entirely owned, maintained and restructured in recent years. The weight of the OFF on the total of the university financial statement is about 35%. in the last several years, coherent with the policies of the Ministry for gradual reduction of the OFF, the university is continuing a constant and strong policy of rationalisation of its educational offering that, among the other effects, has enabled it to report considerable savings and deviate resources towards a policy of increasing the research personnel.

POLITECNICO DI TORINO

APPENDICES

- *Infrastructure in relation to the number of students and staff: number and size of buildings, facilities, laboratories, and libraries; their location (e.g., dispersed over a large geographical area or concentrated on a single campus); condition of the facilities*

The Politecnico di Torino has property at the following main locations:
- Castello del Valentino (74,900 sq.mt.)
- Cittadella Politecnica (98,400 sq.mt.)
- Corso Duca degli Abruzzi (201,400 sq.mt.)
- Lingotto (23,000 sq.mt.)

Classrooms
The following are a few indicators on the availability of seats and classrooms: the data derive from the survey Nuclei 2009 (classrooms as at 31/12/2008). As indicator, we have used the ratio between no. of seats in the classroom and students enrolled
For classrooms shared by more than one Faculty, the number of weekly hours was divided equally among the Facultiess that use them.
The table indicates for every Faculty the number of students enrolled, number of classrooms and number of seats per classroom for exclusive or shared use.

Number of students enrolled and seats in classrooms at the main campus

Faculty	enrolment 2009/2010 Turin Campus (*)	no. of exclusive classrooms	no. of shared classrooms	no. of seats per exclusive classroom	no. of seats per shared classroom	Total classrooms/seats	Indicator
Engineering I	9,449	21	16	8,509	747	9,256	0.98
Engineering III	3,459	27	11	2,612	548	3,160	0.91
Engineering IV	2,098	9	6	1,381	419	1,800	0.86
Architecture 1	2,976	22	9	2,029	339	2,368	0.80
Architecture 2	2,934	20	3	1,746	156	1,902	0.65

(*) 1st and 2nd level degree enrolment at 31/01/2010

Number of students enrolled and seats in decentralised campus classrooms

Campus	enrolment 2009/2010 at decentralised campuses (*)	total seats/classroom for exclusive use	total seats/classrooms for shared use	total seats/classroom	Indicator
Biella	123	205	-	205	1.7
Alessandria	353	664	90	754	2.1
Mondovì	732	369	756	1.125	1.5
Vercelli	912	1.405	-	1.405	1.5
Verres	151	225	-	225	1.5

(*) 1st and 2nd level degree enrolment at 31/01/2010

APPENDICES

Information technology laboratories

The data used derive from the survey *Nuclei 2009 – IT laboratories (data at 31.12.2008)* that refers to the IT laboratories in all the structures with at least 5 networked workstations and to the number of open hours weekly; individual workstations are not considered (for example those available to students enrolled in post-graduate programs), the information points and workstations not organized in laboratories available to the students.

The figures refer to workstations effectively operating, even if the structure or laboratory permits or provides for multiple use of the same workstation.

For the modes in which the survey has been made until now, it is not possible to attribute the use of these structures to the respective Faculties to which they mainly refer.

Information laboratories where research is prevalent have not been taken into consideration because this means they are not mainly used by the students. As indicator, the ratio between the number of seats in the laboratory times the average weekly open hours and the total number of students enrolled, where the average weekly open hours are given by the ratio between the weekly open hours and the number of laboratories

Number of networked workstations and average weekly open hours of IT laboratories on the main campus

	No. of networked workstations	average weekly open hours
University	732	49.61
Department	459	37.81
Faculty	439	48.57
Interdepartmental	176	43.20
Interschool	40	50.00
	1,846	43.56

Workstations online	weekly average open hours	Enrolment 2009/2010 main campus in Turin (*)	Indicator
1,846	43.56	20,916	3.84

(*) 1st and 2nd level degree enrolment at 31/01/2010

Number of workstations online and weekly average open hours of the information workshops at the decentralised campuses

Campus	No. of workstations online	average weekly open hours	Enrolment 2009/2010 Decentralised campuses (*)	Indicator
Alessandria	67	18.67	353	3.54
Biella	35	6.00	123	1.71
Mondovì	108	29.75	732	4.39

APPENDICES

Vercelli	164	36.50	912	6.56
Verres	142	39.67	151	37.30
	516	31.96	2.271	7.26

(*) 1st level and 2nd level degree students enrolled at 31/01/2010

Libraries

The Library system of the Politecnico di Torino coordinates all the university's libraries: the Central Library of Engineering and Architecture, and the many sectorial libraries. The division of the sectorial libraries, which may be assigned to one or more departments, reflects a division by cultural and scientific areas.

Through the Central Information and Library Services, the Library system also coordinates all the activities relative to the handling and availability of the information that can be consulted directly via a local user terminal or by remote users via Internet.

The university started to computerise its Library System in 1983; since 1995 it has been possible to consult the archives of catalogue registrations through a web interface.

Table 1 lists the data relative to the Library System, while the tables that follow are calculated with the following indicator:

$$\frac{\text{carrels* weekly average open hours}}{\text{students enrolled}}$$

The data published here derive from the survey *Nuclei 2009 - Libraries (data at 31.12.*2008) that refers to all the library structures with 10 or more carrels, usable by the students. The organisation of libraries in the university does not make it possible to analyse them at the level of the Faculties.

APPENDICES

The Library system in figures, data as of 2009

MAIN DATA FOR 2009

Principali dati 2009		
Operazioni di prestito (inclusi rinnovi e restituzioni)	144.453	+ 0,05 %
Download di risorse elettroniche full-text	414.641	+ 26,8 %
Queries di banche dati bibliografiche	184.933	+ 11,1 %
Visite al sito web del Sistema Bibliotecario	351.499	-6,9%
Accessi al sito web del Sistema Bibliotecario	14.999.043	+ 56,8 %
Sessioni uniche di accesso al catalogo	294.283	+ 30,9 %
Volumi di monografie acquisiti nel 2009	9.742	+ 144,5 %
Tesi (laurea e dottorato) catalogate nel 2009	2.948	+ 7,2 %
Sessioni DigProxy	12.155	+ 7,5 %

Loans, including renewals and returns
Downloads of full-text electronic resources
Queries of bibliographic data banks
Visits to Library System website

Accesses to Library System website
Single accesses to catalogue
Volumes of monographs purchased in 2009
Theses (degree and doctorate) catalogued in 2009
DigProxy sessions

Patrimonio descritto in catalogo		
Volumi di monografie	372.805	+ 2,7 %
Titoli di periodici	7.145	+ 1,2 %
Tesi di laurea	40.028	+ 7,2 %
Tesi di dottorato	1.577	+ 20 %

STOCK DECRIBED IN CATALOGUE
Volumes of monographs

Periodicals
Degree theses

Doctoral theses

Number of carrels and library open hours at the main campus as of 31/12/2008

Campus	No. of workstations online	average weekly open hours	Enrolment 2009/2010 Decentralised campuses (*)	Indicator
Alessandria	67	18,67	353	3,54
Biella	35	6,00	123	1,71
Mondovì	108	29,75	732	4,39
Vercelli	164	36,50	912	6,56
Verres	142	39,67	151	37,30
	516	31,96	2.271	7,26

(*) 1st level and 2nd level degree students enrolled as of 31/01/2010

APPENDICES

No. of carrels	open hours per week	Total enrolment BS+MS as of 31/01/2010	Indicator
752	31	20.916	1,11

Number of carrels and library open hours at the decentralised campuses as of 31/12/2008

	No. of carrels	open hours per week	Total enrolment BS+MS as of 31/01/2010	Indicator
Vercelli	80	34	912	2.98
Mondovì	24	40	731	1.31
Alessandria	40	6	353	0.68

- *Handbook for prospective international students*

At the website http://international.polito.it, it is possible to find complete information about internationalisation, including all practical data and information about scholarships and teaching programs. The website is in the following languages: Italian, Spanish, English, French and Chinese. In addition, at the http://apply.polito.it, Italian and foreign students can apply for courses at all levels (bachelor's, master of science, master's and doctorate) offered by the university.
A guide in English was also prepared recently for foreign students.

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POLITECNICO DI TORINO

STUDENTS' HANDBOOK

CONTENT

1

WELCOME TO
THE POLITECNICO
DI TORINO

Message from the Rector

Who we are

Ten reasons to choose the Politecnico di Torino

Klajdi Mustafaj (Albania) Automotive engineering

It's been almost 4 years since I started studying in Politecnico di Torino. I chose the automotive engineering course because I've always been attracted to cars. Politecnico is one the few universities that has a specific course for automotive design and my classes are held in Lingotto, that is the historical FIAT factory and motor show, now turned into FIAT headquarters, lecture halls and shopping center. The lecturers have been very interesting with a lot of class practices and laboratory courses. The teachers are supportive, offering assistance during class time as well as one-on-one consultations. The facilities are great to, especially the technological ones. There are a lot of activities in which the students can take part such us student projects related to the design, manufacturing and racing of small open wheel race vehicles driven by engine, electric motor or hydrogen propulsion. All these, joined to the career opportunities offered, made studying in Politecnico the right choice for me. Furthermore Politecnico is careful about students economic situations and I've been sustained during these years by a scholarship. This made living here much easier. I met new people from all over the world in Politecnico and made friends a lot of Italian guys. Torino is a great city and it's not "big and busy" so I don't feel overwhelmed. The social life is excellent, there are many sporting opportunities and great nightlife. Moreover the people are friendly.

Dear student,

first of all thank you for your interest in the Politecnico di Torino!
The long-standing tradition of our University has been the basis for the reputation it enjoys today as one of the leading technical universities in Italy and throughout the world.
Students choose the Politecnico di Torino because of its serious approach, selectivity, and also because it is challenging and rewards students for merit, providing the basis for a successful career. Students who are interested in research and are looking for a thorough education which is relevant to the job market will be attracted to what we have to offer at the Politecnico di Torino. Our university provides vocational education that goes further than technical knowledge and requires a strong commitment and hard work from students.
Our university has the highest percentage of foreign students in Italy and our students can choose to study for their degree through English.
The Politecnico di Torino offers a multicultural study environment and has a close relationship with businesses, who share our premises and work with us on many projects giving students the opportunity to gain work experience during their years at university.
The Cittadella Politecnica is a new campus area where research, teaching and training go hand in hand with student services as well as financial and cultural activities. The Business Research Center inside the cittadella produces cutting-edge research for international corporations while the Venture Capital Section gives research the backing it needs to develop. Over the last ten years more than 100 business start-ups have been launched with the support of the I3P Incubator, which is also in the cittadella area.
Newly-built facilities include lecture rooms, study areas, the new student canteen, and a new sports center which will be opening soon.
The Politecnico di Torino is a research university, where training and research work together to meet the needs of the local area and economy and above all of the students. It offers a unique experience for students who intend to seize all the opportunities the future can offer.

I will be pleased to welcome you to the Politecnico di Torino for a period of study!

Prof. Francesco Profumo
Rector of the Politecnico di Torino

The Politecnico di Torino is the oldest technical university in Italy: it was founded in 1859 as Scuola di Applicazione per gli Ingegneri, and in 1906 merged with the Museo Industriale Italiano (established in 1862) to found the Regio Politecnico di Torino. It aimed to train engineers and architects and to promote study and activities for industrial and business purposes in Italy.

Following the model of the most important European Schools of Engineering, during the first years of the twentieth century the Regio Politecnico di Torino forged relationships both with the European scientific world and with local and national industries. In the same period the discipline of aeronautics was in its infancy and young students coming to Torino from every part of Italy found an animated and creative atmosphere, where the future was within reach.

Today the Politecnico di Torino covers all the educational areas of Engineering and Architecture.

WHO WE ARE

Erick Bosso (Brasil)
Quando fui aprovado no programma MERIT – Master of Research in Information Technologies – tive a oportunidade de escolher uma entre várias universidade renomadas da Europa. O Politécnico de Torino foi a minha opção para o primeiro ano de curso, depois de uma verificação cuidadosa da reputação e da qualidade de ensino da entidade. Pude confirmar o sucesso da minha escolha logo ao chegar em Turim, uma cidade próspera, organizada e com uma desenvoltura cultural comparável a de uma grande cidade européia.

29.500 STUDENTS

4.800 First year students (every year)

2.300 Master of Science graduates (every year)

POLITECNICO IN NUMBERS/FIGURES

2.000 Bachelor's Degree graduate students (every year)

750 PhD students

3.550 Foreign students

170.000 Hours of teaching

900 Professors and researchers

Last update: December 2010

TEN REASONS TO CHOOSE THE POLITECNICO DI TORINO

The Politecnico di Torino's rating among Engineering universities:

| (ARWU 2010)	QS 2010
57th in the world	100th in the world
7th in Europe	29th in Europe

1. Most degrees offered entirely through English (Bachelor of Science, Master of Science, Specializing Master and PhD programs).

2. Excellent internships on offer (either in Italy or abroad) thanks to the relationship between the Politecnico di Torino and industry.

3. Study plans in collaboration with foreign universities (310 bilateral agreements, and 71 Double Degree Agreements).

4. Global education: about 12% of students are foreign, and the number of international students has increased remarkably-up 49% in the past 5 years.
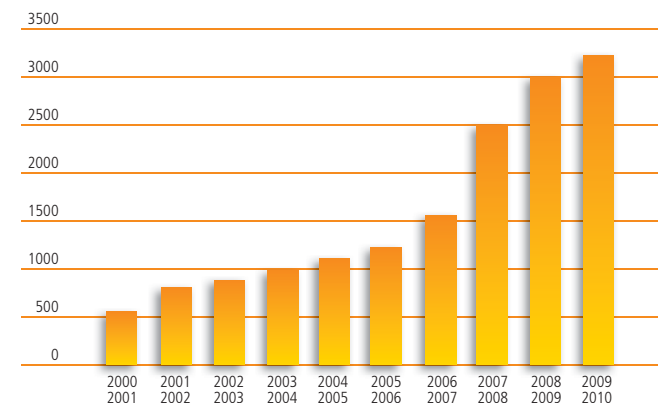
5. Great support services for international students: help in looking for an apartment, assistance in bureaucratic procedures, linguistic mediators.

6. Welcome activities for international students (orientation meeting, Italian language courses, sightseeing tours of Torino, free courses about the architecture of the city and local culture, sports activities etc.).

7. Excellent communication: multilingual website (English, Chinese, Spanish, French) dedicated to foreign students, multilingual staff.

8. More than 150 years of polytechnic culture.

9. Prestigious and well equipped campuses (eg. architecture in Valentino castle, aerospace engineering in Alenia, automotive engineering in Lingotto, the ex-FIAT factory etc.).

10. Excellent reputation according to international rankings.

2 WELCOME TO ITALY
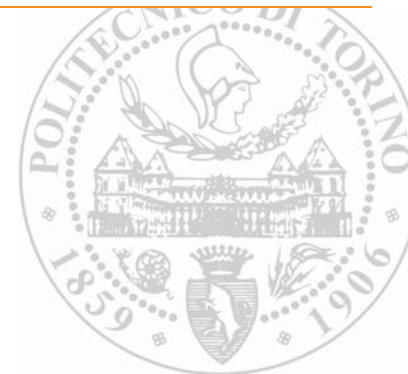
HAN JING

韩晶： 我在都灵理工攻读二级硕士学位。初到这座陌生的城市时，我对一切都是一头雾水。幸亏有了老师和同学们细致入微的帮助，我的学习和生活才很快进入了正轨。在都灵理工，我感受到了一种全新的教学模式，更加面向实际应用，使我的综合素质有了很大提高。时间久了，我已经不知不觉爱上了都灵，这里有美丽的城市、热情善良的市民，舒适的生活，一流的学校，一切都是那么美好！

Today Italy ranks among the 8 most industrialized countries in the world. Alongside big companies, both state-owned and private, it has developed a sound network of small and medium-sized businesses, it promotes science parks, and incentivizes basic and applied research in a great variety of fields (biology, ICT, medicine, physics, etc.).

Italy has played an important role in European higher education: it is one of the four countries that first created the "European Area of Higher Education" (Sorbonne Declaration, May 1998), thus starting the "Bologna Process", a reform of higher education (Bologna Declaration, June 1999) which is now being implemented all over Europe.

No other country in the world has as many artistic and cultural treasures as Italy. More than half of the historical and artistic world heritage centres are in our country (UNESCO data).

Italy is a country rich in history and traditions, and its museums, cathedrals, residences, castles, archaeological sites, etc are a testament to this in Italy places conserve important traces of the past and the natural environment surprises the visitor with snow-capped mountains and kilometers of seashore all around the peninsula.
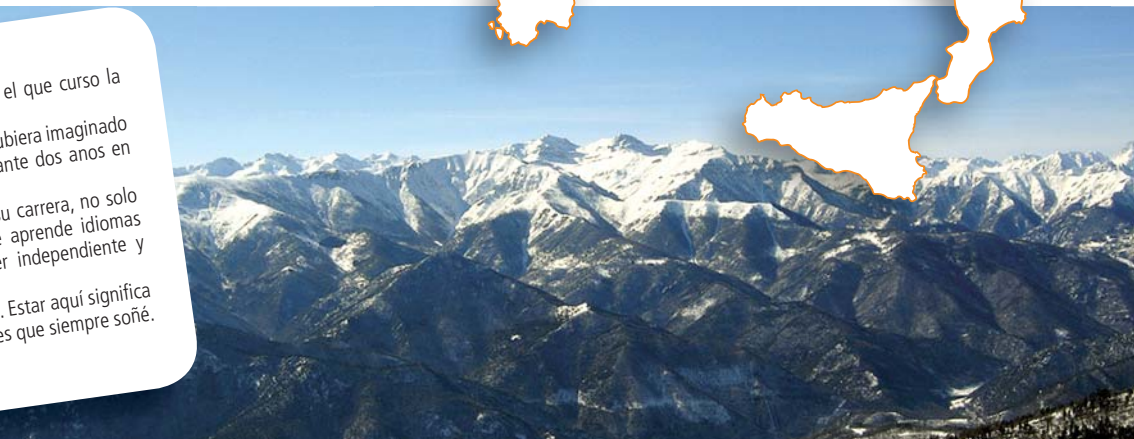
ITALY

PIEMONTE

Piemonte is the second largest region in Italy in area, with a surface area of more than 25,000 sq. km. Piemonte borders on the west with France, on the north with Switzerland, north west with the Aosta Valley, east with Lombardia, south east with Emilia Romagna and south with Liguria.

AUSTRIA

SWITZERLAND

SLOVENIA

AOSTA VALLEY

LOMBARDIA

Turin

EMILIA-ROMAGNA

FRANCE

MAR ADRIATICO

LIGURIA

MAR LIGURE

MEDITERRANEAN SEA

Rome

MAR TIRRENO

Cristina Giummarra (Venezuela)

Participo en el programa Doppia Laurea del Politécnico de Torino en el que curso la Laurea Specialistica en Ingeniería Mecánica.

Soy hija de italianos, sin embargo, descubrí muchas cosas que nunca hubiera imaginado si no hubiera decidido venir a estudiar aquí y por lo tanto vivir durante dos anos en Italia.

...Creo que todo estudiante que decide ir a otro país a completar su carrera, no solo tendrá muchas mas oportunidades en el mercado laboral porque aprende idiomas y a relacionarse con la gente, si no que además aprende a ser independiente y responsable!

Extraño mucho mi país, pero mi estadía en Torino la vivo al máximo. Estar aquí significa enriquecer cada dia mi existencia, comer muy rico e ir a las ciudades que siempre soñé. Torino, Italia y Europa no dejan de sorprenderme.

THE CITY OF TORINO

Torino, the capital of the Piemonte region, is one of the main cultural, touristic, scientific and university centres in Italy.

Torino was the first capital of a united Italy in 1861 and today it is a city on a human scale with approximately 1 million inhabitants. Its hills, parks, gardens and four rivers make it one of the greenest cities in Europe. It is crossed by the river Po - the longest river in Italy.

It is located in the north-west of Italy, at the foot of the Alps. Torino's climate is definitely more continental than Mediterranean in nature. The winter months bring cold, although not harsh weather and summer visitors can look forward to high, but not excessive, temperatures. Rainfall can be heavy at times, but is mostly restricted to late spring and the autumn.

The slogan chosen to promote the city, "Torino always on the move", renders perfectly the idea of a city undergoing a profound process of modernization.

Heir to a tradition which is typically industrial, as it was in the mid-nineteenth century, nowadays Torino is a worldwide point of reference for ICT technology - partly thanks to the impulse given by the Politecnico, with its establishment of research centres and its high-level training in the communications sector.

The city offers a rich calendar of events, concerts, exhibits, a great variety of sports and cultural initiatives throughout the year. We hope you can come and experience Torino for yourself!
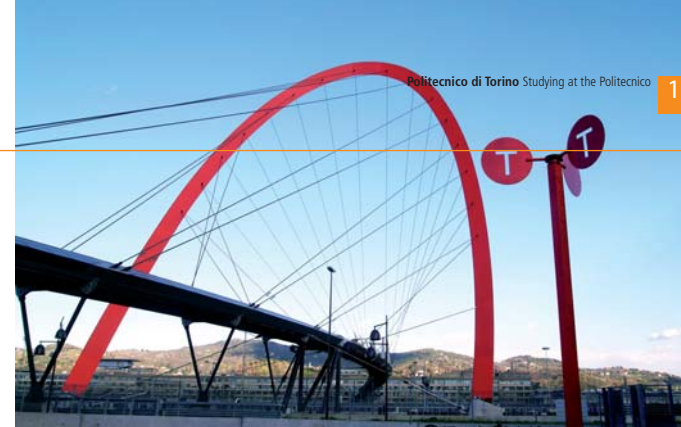
HOW TO GET
AT THE POLITECNICO

- by plane: Torino is served by an ultra-modern airport: Caselle "Sandro Pertini", with a capacity of over three million passengers a year. Intercontinental links are provided by Malpensa 2000, one of Europe's largest hubs with its 17 million passengers a year. Torino airport is located only 16 kms/10 miles north of the city centre.
  Turin airport www.aeroportoditorino.it/en/hp_en.html
  Milan airports www.sea-aeroportimilano.it/en/

- by train: Torino is a railway junction of national and international importance.
  www.ferroviedellostato.it/homepage_en.html

- city map: www.comune.torino.it/canaleturismo/en/map.htm

DID YOU KNOW THAT...

- Torino has a Roman archeological site; Julius Caesar founded the city before 51 B.C.
- Torino is the fourth largest city in Italy, and third most important financial center.
- In the eighteenth century, Torino became popular as one of the capital cities of European Baroque architecture, with its sumptuous royal residences, impressive church-domes and palaces.
- In Torino you can stroll and go shopping under 18 km of arcades. These Baroque style arcades were built so that the royal family could go out for a walk when it was raining.
- Torino's Egyptian Museum is the second most important in the world after El Cairo.
- Italian cinema and television started life in Torino. The Mole Antonelliana, symbol of the city, houses the National Museum of Cinema.
- The city has a long tradition of producing fine chocolate, Gianduiotti chocolates are the tempting symbol of the city.
- Torino is capital of Italy's car industry: Fiat was founded in 1899 and it's headquarter is located in the city.
- Torino is home of Fiat, founded in 1899.
- Torino hosted the 2006 Winter Olympics and the 2007 Universiade.

CLIMATE

Piemonte has a continental kind of climate with a considerable range of temperature during the day and over the year, since the region is protected from the coast. Average temperatures vary from minus 1° to 9° C during the winter and from 24° to 30° in the summer. Most of the rain falls between October and April.

PUBLIC HOLIDAYS

JANUARY 1st	New Year's day
APRIL 25th	Anniversary of the Liberation of Italy
MAY 1st	Labour Day
JUNE 2nd	Republic Day: Birth of the Italian Republic, 1946
JUNE 24th	St John's Day
AUGUST 15th	Assumption Day
NOVEMBER 1st	All Saints
DECEMBER 8th	Immaculate Conception
DECEMBER 25th	Christmas Day
DECEMBER 26th	St. Stephen's Day

Julien Collinet (France)

J'ai décidé d'étudier au Politecnico car ma faculté d'origine ne présentait que trois établissements et après avoir parcouru les sites web de chacune des écoles, mon choix s'est orienté vers le Politecnico di Torino.
Au Politecnico j'ai réalisé une "laurea specialistica in ingegneria informatica" pour valider mon Master 2. Je suis resté à Torino pendant neufs merveilleux mois. Le J'ai découvert une splendide ville du nord de l'Italie avec une culture très riche. Le Politecnico rassemble des étudiants de toute l'Italie et du monde entier ce qui permet de connaître encore plus de cultures et coutumes traditionnelles.
Les aspects les plus important de mon expérience à Torino sont l'ouverture d'esprit vis-à-vis du monde qui nous entoure grâce à la culture et les rencontres le tout dans un cadre studieux ou les connaissances d'ordres générales et techniques sont améliorées.
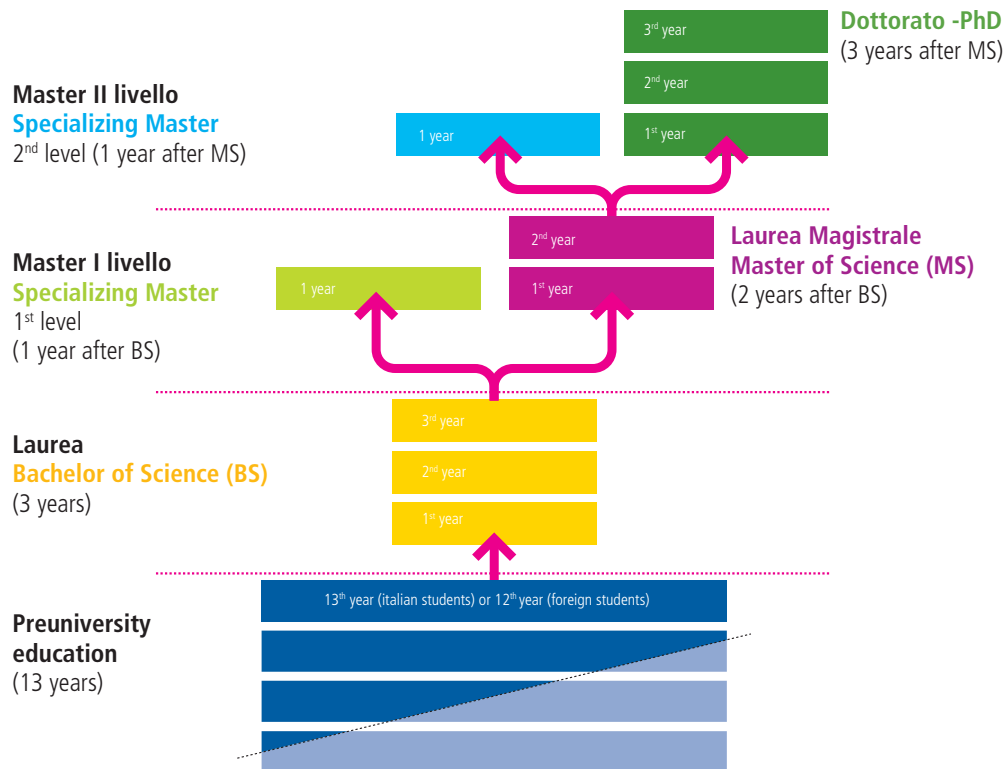
Italy has adopted the European Credit Transfer System (ECTS) which has the following characteristics:

- the credits represent the student's total workload (class time, individual study, exam preparation, practical work etc.) and one credit is equivalent to 25 hours;

- the average full-time workload for one academic year is 60 credits which is equivalent to 1500 hours.

The 1st degree (Bachelor of Science) is obtained after having completed 180 credits.

Master of Science is obtained after completing a further 120 credits.

THE ITALIAN EDUCATION SYSTEM

GRADES

The grades for individual exams given in the Italian University system are expressed in fractions of 30: the maximum mark is 30/30 and the minimum passmark is 18/30.
At the end of the Bachelor of Science and Master of Science courses each student is required to present a final project and the final grade is expressed as a fraction of 110.

Master II livello
Specializing Master
2nd level (1 year after MS)

3rd year — **Dottorato -PhD** (3 years after MS)
2nd year
1 year | 1st year

Master I livello
Specializing Master
1st level
(1 year after BS)

2nd year — **Laurea Magistrale Master of Science (MS)** (2 years after BS)
1 year | 1st year

Laurea
Bachelor of Science (BS)
(3 years)

3rd year
2nd year
1st year

Preuniversity education
(13 years)

13th year (italian students) or 12th year (foreign students)

If you hold a foreign high school diploma, you must have attended school for at least 12 years

3

GENERAL INFORMATION

Courses available

Academic calendar

Internships and employment

满怀着激情与憧憬，我们踏上都灵的土地，走进了理工的校门! 不觉间感受到了"木欣欣以向荣，泉涓涓而始流"的气息！
作为博士的我们，我们更加追求学术的突破。之所以选择这里，是因为理工有着优越的科研环境。知名的学者教授、先进的设备、科学的方法以及浓厚的科研氛围都为我们在学术上大展拳脚提供了条件！我们渴望见贤思齐，所以我们会利用对知识的渴望、对科学的热忱脚踏实地的从零开始。"吾生也有涯，吾学也无涯"，以居里夫人为榜样，为自己确立求知进取的信念。
异国他乡，对一切事情都有了新的要求。首要的问题就是语言问题。一口流利的英语当然是必要的，但学习一些基本的意大利词句会对于你尽快地融入到这个环境大有裨益，因为来到这里你便会发现，日常生活不仅不讲英语，而且这里大部分人都不懂英语！再有，生活上对我们提出了更高的要求，我们要自己找房子，自己洗衣，自己做饭，自己照顾自己，一切都要靠自己，甚至一些事是我从来没有经历过的！但是，对我们而言，这只是一种历练，会使我们变得更加成熟！
置身于美丽的都灵，走进理工学术的殿堂，我们大为感慨，"中华学子气方遒，扬帆海外竞上游。栉风沐雨舒壮志，腾蛟起凤展鸿猷。"
让这神圣的理工大学殿堂为我们见证！

ACADEMIC CALENDAR

The academic calendar is divided into either two or four terms according to the Faculty schedules. Lessons start in mid-September and finish in mid-June.

In between every term there is an exam session that lasts either for about two weeks (academic calendar in four terms) or one month (academic calendar in two terms).

INTERNSHIPS AND EMPLOYMENT

The Politecnico di Torino is strongly linked to companies and the business community. It helps its graduates to build up a high profile, offering them skills and competencies which help them to do well in the job market and to successfully follow various career paths, in both large and small companies, as free-lancers or in public entities.

The Politecnico di Torino has already signed 2800 agreements with companies to allow engineering and architecture students and graduates to undergo traineeships, and every year about 3100 students spend a training period in an Italian or foreign company (2600 curricular and 530 optional internships).

69% of our graduates find a job within one year after their degree, in comparison to the national average of 55%, and about 89% of them declare that they are employed three years after their degree.

As a student of the Politecnico di Torino you will benefit from a range of various placement services:
• online job and internship opportunities
• career labs
• professional orientation activities
• employers presentations
• on-Campus recruiting

COURSES AVAILABLE

22 Bachelor degree programs

• 1st year in common for all the bachelor degree programs (55 credits)
• 2nd year organized by subject areas
• 3rd year Specific courses

31 MS degree programs
23 PhD programs
20 Post graduate programs
16 Programs (BS and MS level) completely taught in the English language

The Politecnico di Torino offers a wide range of double degree programs with Central and South America, Europe and China.

In order to work closer with companies and to assist students and graduates in their entry to the job market, the Politecnico di Torino has created the Stage & Job Office.

Katia Leal (México)

¿Estas pensando en hacer un semestre, un año o un postrado en el extranjero? ¡Felicidades! porque estas comenzando la que puede ser la mejor experiencia de tu vida como estudiante.

¿Por qué?, porque si te das la oportunidad, adquirirás la cultura de valorar la diversidad y serás tan rico como diferentes son las personas que conocerás.

Yo trabajaba para una conocida multinacional antes de decidir venir a Italia y renuncié porque deseaba aprender otra forma de pensar y de hacer las cosas, otro idioma y tener la oportunidad de aprender de su cultura, gastronomía, arte, viajar por Europa, además claro de aprender sobre mi área de estudio. Vine con el objetivo de hacer la maestría de un año, ahora estoy terminando el doctorado y ya tengo ofertas de trabajo.

CAMPUS LIFE

4

Facilities

Accommodation

Student Activities and Associations

Living expenses

Free Time in the City

International students will receive help and support both in administrative and logistical matters, which start before their arrival in Italy (e.g. getting the visa, etc.).

The Department of International Affairs is located at the main entrance of the Politecnico di Torino on the main campus.

International students will be assisted by Politecnico di Torino staff together with native speaker cultural mediators for both university and non-academic matters. In particular the Foreign Citizens Services Office supports both students and foreign visitors in finding accommodation and in carrying out all the procedures connected obtaining a residence permit.

Foreign students will also benefit from the help of international Politecnico di Torino students who have experienced similar situations and procedures.

A welcome desk is available during the month of September when the arrival of the majority of international students is expected.

ZHANG CHENMING

我叫张晨明，是都灵理工大学电子工程专业（Ingegneria Elettronica）2007级的本科生。我很快适应了都灵理工的学习，现在学起来比较轻松。我此前在中国的同济大学读了一年，和中国的大学相比，我觉得都灵理工的本科课程更加重视基础学科，尤其是定理和公式的推导证明；做实验时也更加强调学生通过小组协作，独立地、创造性地完成实验。我很喜欢都灵这个城市，不仅因为她风光秀丽、环境宜人，更应为她成熟优雅、和谐舒适。都灵的美食文化，尤其是葡萄酒文化我也非常喜欢。我还是Juventus足球队的忠实球迷。我现在有几个意大利朋友，我觉得自己应该更多的融入到本地人的生活和文化中去。我现在和几个中国同学一起租住一套本地人的公寓，学习生活都很方便。我衷心地感谢都灵理工大学在学习生活各方面给我的支持和帮助，我也会努力做好中意文化交流的使者。谢谢！

FACILITIES

LIBRARIES
The university offers a library service to students at the Politecnico di Torino. All registered students with a Student ID card can use the institute, faculty and main libraries. Books are lent for a period of 14 days, which can be extended, unless another person has reserved them. Further information can be obtained from the libraries.
For further information: www.biblio.polito.it

COMPUTER LABS (L.A.I.B)
Students have the opportunity to use the computer laboratories of the Politecnico di Torino, open an e-mail account on the server of Politecnico, and access the Polito WIFI wireless LAN network (wifi.polito.it).
Politecnico students have a badge number that allows them to obtain a great deal of information and access various services through the "Portale della Didattica". Students can enrol for an exam, see their study plan and download lecture notes.

ITALIAN LANGUAGE
CLA (Language Centre) at the Politecnico di Torino offers all international students Italian language courses free of charge. The Italian Language courses are usually structured in two levels: beginner and intermediate.
Universities for foreigners: Perugia and Siena
The two Italian universities for foreigners are State institutions specialised in teaching and research for the development and diffusion of the Italian language, literature and culture. They both offer courses in Italian Language and Culture all year long: University for foreigners Perugia (www.unistrapg.it/en) and University for foreigners Siena (www.unistrasi.it).

MEALS
A number of student canteens are available on the Politecnico campuses. The student canteens are open from Monday to Saturday and they take turns to stay open on Sundays. In the canteens you can have a meal in a friendly atmosphere near the place where your courses are held. These are cafeteria-style canteens and you help yourself at the counter; usually two or three options to choose from are offered, including international and vegetarian menus.
Please visit:
international.polito.it/en/admission/practical_information/canteens

PART-TIME JOBS AND OTHER SUPPORT RESERVED FOR REGULARLY ENROLLED AND DOUBLE DEGREE STUDENTS (I and II level degrees)
The Politecnico di Torino helps students by offering part-time employment (Collaborazioni part-time) within its offices in the different campuses during the academic year.
When you become a Politecnico student you can apply for this kind of support on the basis of academic merit and income. There is an announcement of competition twice every Academic Year.
On average the employment offered by the Politecnico involves 50 to 150 working hours and payment ranges from 9.30 to 11.40 € per hour.

The Politecnico di Torino awards scholarships for the purchase of teaching equipment such as books, journals and lecture notes related to the courses you are attending. There is an announcement of competition every Academic Year and scholarships are assigned on the basis of academic merit and family income.

TUTORING & COUNSELLING
The Politecnico di Torino has a series of services to help students:
• counselling
• support to students facing difficult personal circumstances (social, psychological, integration in student life...). The service is free and available to the whole student community. Requests for help can be sent by e-mail.
• assistance to students with disabilities
The Politecnico di Torino is committed to improving the quality, range and coherence of day-to-day services and supports students with disabilities

(e.g. service of accompanying persons to help them get to and get around campus as well as other forms of general support).

Disabled students should inform the "Ufficio Orientamento e Tutorato" of their disability before registering for the admission test or before arrival at the Politecnico. The office offers support and facilities for study and help in fulfilling administrative requirements.

MEDICAL SERVICE

In the Main Politecnico Campus (Corso Duca degli Abruzzi) there is a Medical Service (Infermeria) where a nurse can help you if you feel ill.

Please note that all Politecnico students benefit from an accident health insurance taken out annually by the Politecnico itself.

Please note that immigration law requires non-Eu citizens to take out a health insurance during their stay in Italy. If you take out a private insurance in your country, please check on our website the necessary requirements (international students: admission>information>immigration requirements >residence permit>health insurance).

Alternatively, once you arrive in Italy you can take out INA-Assitalia Insurance.

Students from the European Union member countries, who upon arrival have an E106 Form, a statement of the original European Health Card issued by their country, have access to the same services as the Italian citizens, offered by the Italian National Health Service (SSN).

ACCOMMODATION

International students coming to the Politecnico have an excellent chance of being offered suitable accommodation.

Students applying for Politecnico student residences must be aware that the demand for places does exceed accommodation availability, for this reason all arrangements must be made in advance.

Politecnico also offers help in finding accommodation in private rooms or flats (only after student arrival).

International students can choose from three types of accommodation:
• student dormitories;
• hall of residence;
• private apartments.

The Politecnico di Torino acts as a free agency putting landlords and tenants in touch with each other, but private properties are not visited or inspected by the Politecnico, so it is the responsibility of the student to see if the place is suitable.

For further information about accommodation and reservations, please visit http://international.polito.it/en/
or contact foreign.citizens@polito.it.

SPORTS AND
LEISURE ACTIVITIES

C.U.S. Torino (Centro Universitario Sportivo) organizes sports activities for students and academic staff. Students can do different sports, the most popular being soccer, skiing, swimming, basketball, tennis, volleyball and aerobics. All sporting events are conducted at the C.U.S. facilities and grounds in different areas of the city. Special events are organized for foreigners and good rates are applied.

For further information visit the C.U.S. website: http://www.custorino.it

CULTURAL ACTIVITIES

Leisure, theater and concerts are offered at special "student prices" by the Politecnico di Torino. Polincontri (Associazione per la cultura, lo sport, il tempo libero) is an association that organizes many cultural activities. Members have discounts in many shops, libraries and sport facilities, free access to many clubs and discounts when buying tickets for cinemas, theaters and concerts. Other special events are organized by Polincontri.

For further information you can visit the home page:

www.polincontri.polito.it

STUDENT
ASSOCIATIONS

In the Politecnico di Torino there are many student associations that give students the opportunity to experience the university in a different way, to meet new friends, and to participate in social events.

STUDENT ACTIVITIES
AND ASSOCIATIONS

Laura Santos

When I came from Colombia to the Politecnico di Torino for my Master of Science in Eco-Compatible Product Design I came looking for a higher and more specialized education as well as an international experience, but for my benefit it turned out to be so much more than that.

I found myself in a University with a multicultural atmosphere and international environment where a significant number of the students come from different parts of the world. I have had classes with students from different countries that enriched and enlarged my vision of design and helped me to look and analyze problems from different perspectives.

The university also supported me in looking for an internship in a Design studio in Turin where I had the opportunity to work in real projects and gather valuable experiences for my future professional career.

Additionally when I was looking for a summer job, the University the gave me the opportunity to work in the Department of International Affairs (Incoming Office) where I received the chance to work and meet a lot of great people.

In all the Politecnico di Torino gave me more that what I asked for and I have been very glad of all the opportunities that I have received constantly during the past 14 months of my experience in Italy, I must say I am very glad personall

LIVING EXPENSES

COST OF LIVING

Prices can vary considerably depending on where you live and what you buy. Tourist areas and the main cities are more expensive than smaller towns.

Considering accommodation, food, telephone, local travel and leisure costs, you should plan for a monthly budget of 600.00/800.00 €.

Milk	€ 1.30 / Litre
Bread	€ 2.50-4.00 / Kilo
Butter	€ 1.70-250 gr.
Olive oil	€ 4.00 – 6.00 / Litre
Beef	€ 10.00-19.00 / Kilo
Chicken	€ 9.00-12.00 /Kilo
Fish	€ 10.00-20.00 / Kilo
Rice	€ 1.70-2.50 / Kilo
Pasta	€ 1.00-1.50 /Kilo
Salad	€ 2.00-4.00 /Kilo
Potatoes	€ 1.00/Kilo
Mineral water	€ 0.20-0.80 /Litre
Student canteens	€ 2.50-7.00
Accommodation	€ 250.00/350.00 per month/person in a private flat
Text books	about € 300.00-400.00 per Academic Year
Public Transport ticket	€ 1.00 (urban one-way ticket which lasts 70 minutes)
Cinema tickets	€ 5.00/10.00
Theatre tickets	€ 15/60
Discos	€ 10/20
Pizza and beer/soft drink	€ 15

TRANSPORT IN TURIN

If you are under 26 you can buy an "Abbonamento Mensile Studenti" which costs 18.00 €. This ticket lasts a month. 10 or 12 month transport tickets - "Abbonamenti" - are also available.
For students who are over 26 years old different options exist.
For detailed information visit the GTT website:
www.comune.torino.it/gtt/en/fares

Sotto, la sede del GAM, Galleria Civica di Arte
Moderna e Contemporanea Torino

FREE TIME IN THE CITY

ARCHITECTURE

Piemonte has an important artistic and cultural heritage in its cities and towns. There is a wealth of architecture from different historical periods, and styles which include Romanesque, Neo-Classical, Baroque and Contemporary.

MUSEUMS

There are 40 museums in the city and 130 in the Piemonte region. In Torino the Egyptian Museum and the National Museum of Cinema are among the most popular.

EATING OUT

The city is famous for its chocolate production, Gianduiotti chocolates are the best known but you can also find handmade pralines, chocolate creams, chocolate truffles, marron glaces and many others in any pastry shop.

Piemonte is also a wine producing region. You can find wine in the vineyard areas and in wine bars in Torino. In our Region there are 27000 wine growers. The Region is home to some of the most internationally famous wines, such as Barolo and Asti.

A meeting point for new generations comes from one of the oldest tradi-

Progetto di ristrutturazione ed ampliamento del Museo Nazionale dell'Automobile, a cura dell'Architetto Cino Zucchi di Milano

Palazzo Madama è spesso sede di importanti mostre ed eventi

tions of Torino, the aperitif. Before having supper you can enjoy canapés and other snacks, together with your friends.

SHOPPING

In the city center, under the porticoes you can find everything you can imagine: from important Italian fashion design shops to delicatessens, from valuable antiques to hospitable cafés. It is also possible to discover the colourful Porta Palazzo, the largest open market in Europe. In the lively via Garibaldi, the long pedestrian street in the heart of the city, you can find the best in fashion.

MARKETS AND LOCAL STREETS MARKETS

You can enjoy walking among multicoloured stalls in search of valuable antiques, exquisite artefacts and local products. Craftsmen, antique dealers and farmers, professionals and enthusiasts arrange to meet periodically in the squares of Torino.

NIGHTLIFE

Torino offers several discotheques and disco pubs for dancing until dawn and enjoying a pleasant night with friends. In the last few years the city's nightclub scene has also been updated: Murazzi del Po and Quadrilatero Romano host trendy haunts where art and music, food and design come together to make the night even more scintillating. Thousands of people stroll in these areas from dusk to dawn: join them to experience a lively and absorbing side of Torino.
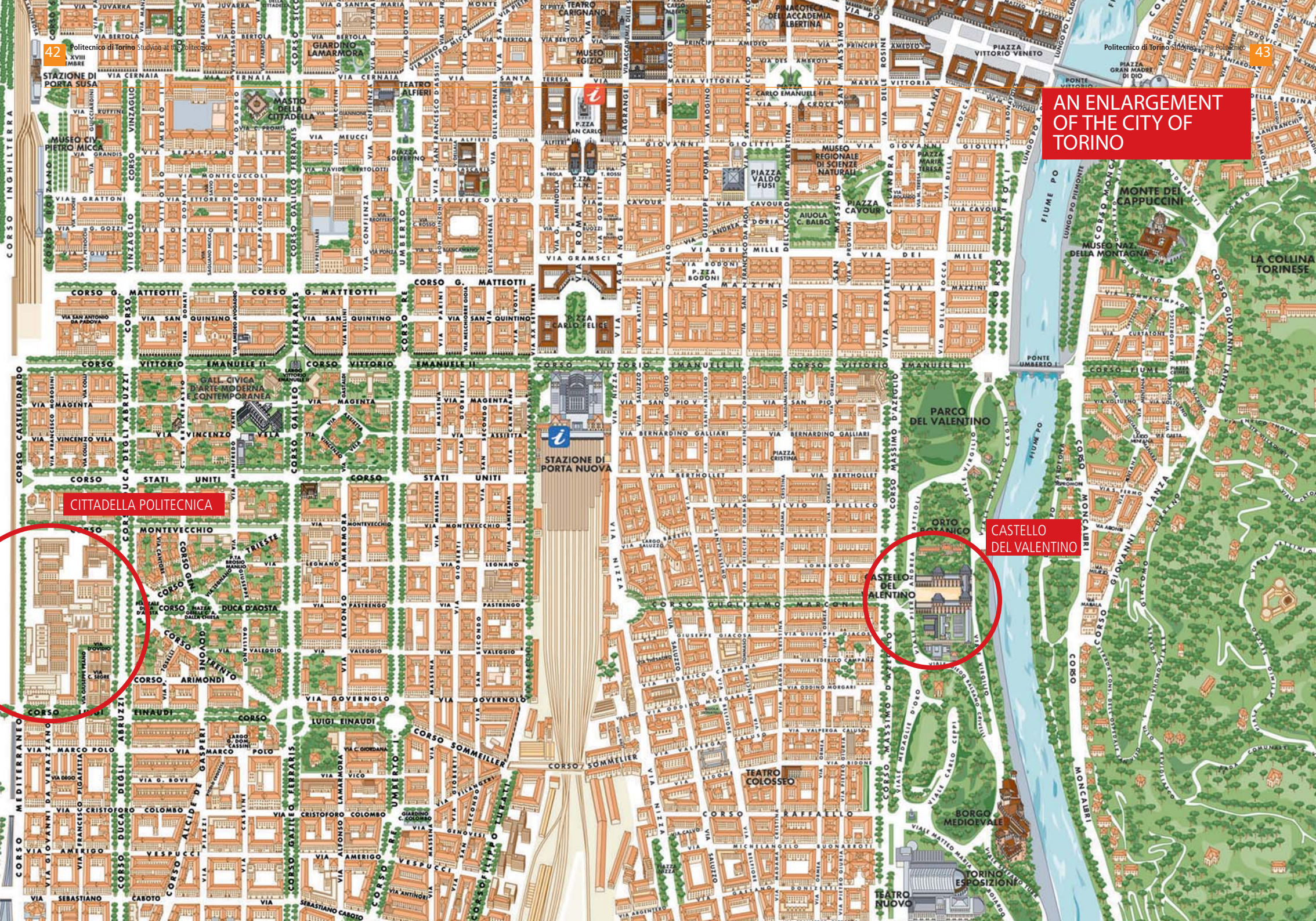
SPORT

Torino is the capital of the Italian passion for sports: skiing and football, ice-skating and boat racing. Many sports that have found room to develop here have provided Italy with great champions. It is possible to play every kind of sport from outdoor sports to water and air sports.

For example you can go boat racing and see the city from an unusual viewpoint; run in the city parks; play golf. Also 41% of the region is located on the imposing Alps, where you will find famous skiing resorts, some of which hosted the 2006 Winter Olympic Games and the 2007 Universiade.

For further information visit: www.turismotorino.org

AN ENLARGEMENT OF THE CITY OF TORINO

CITTADELLA POLITECNICA

CASTELLO DEL VALENTINO

STAZIONE DI PORTA SUSA

STAZIONE DI PORTA NUOVA

PARCO DEL VALENTINO

CASTELLO DEL VALENTINO

ORTO BOTANICO

FIUME PO

MONTE DEI CAPPUCCINI

MUSEO NAZ. DELLA MONTAGNA

LA COLLINA TORINESE

MUSEO EGIZIO

MUSEO CIVICO PIETRO MICCA

MUSEO REGIONALE DI SCIENZE NATURALI

PINACOTECA DELL'ACCADEMIA ALBERTINA

TEATRO CARIGNANO

TEATRO ALFIERI

TEATRO COLOSSEO

TEATRO NUOVO

TORINO ESPOSIZIONI

BORGO MEDIOEVALE

GALL. CIVICA D'ARTE MODERNA E CONTEMPORANEA

MASTIO DELLA CITTADELLA

PIAZZA VITTORIO VENETO

PIAZZA GRAN MADRE DI DIO

PIAZZA CARLO FELICE

PIAZZA SAN CARLO

PIAZZA CASTELLO

PIAZZA STATUTO

PIAZZA SOLFERINO

A SHORT SURVIVAL DICTIONARY ENGLISH-ITALIAN…

6
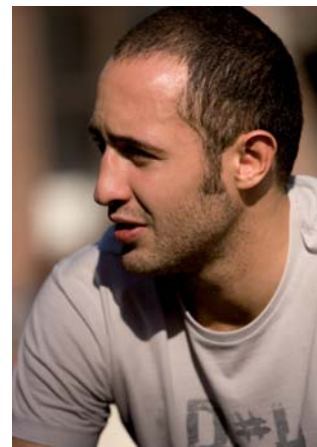
GENERAL SENTENCES…

Can you help me?	Può aiutarmi?
Do you speak English?	Parla inglese?
I don't understand	Non capisco
I don't know	Non lo so
I am hungry	Ho fame
I am thirsty	Ho sete
I am tired	Sono stanco
I am lost	Mi sono perso

GREETINGS AND PRESENTATION…

Hello	Ciao
Good Morning	Buon giorno
Good Evening	Buon pomeriggio
Good Night	Buona notte
Goodbye	Arrivederci
Please	Per favore
Thank you	Grazie
I am sorry	Mi dispiace
Excuse me	Mi scusi
How are you?	Come va?
Good, thank you	Bene, grazie
Not good	Non troppo bene
What's your name?	Come ti chiami?
My name is …	Mi chiamo …
Where are you from?	Da dove vieni?
I am from …	Vengo da …
How old are you?	Quanti anni hai?

ORIENTATION…

Where is …	Dov'è …
…the post Office?	…l'ufficio postale?
…the toilet?	…il bagno?
…the town centre?	…il centro?
the train station?	la stazione?
the airport?	l'aeroporto?
the bank?	la banca?
the hotel?	l'hotel?
the youth hostel?	l'ostello?
the hospital?	l'ospedale?
the police station?	la polizia?
the embassy?	l'ambasciata?
How much is a ticket to …?	Quanto costa un biglietto per …?
Where does this bus	train go?	Dove va questo autobus	treno?
Does this bus	train stop at …?	Si ferma a …?
Turn left	Gira a sinistra
Turn right	Gira a destra
Straight ahead	Sempre dritto
Go back	Torna indietro
Stop	Fermati
I need to go to …	Devo andare a …
How much to go to …?	Quanto costa fino a …
This is my passport/	Questo è il mio passaporto/
identity card/residence permit	carta d'identità/ permesso di soggiorno

AT THE RESTAURANT…

I would like to order…	Vorrei …
The bill please!	Il conto per favore.
Can I pay with a credit card?	Posso pagare con la carta di credito?
A table for two, please	Un tavolo per due, per favore.
What can you recommend?	Che cosa potete consigliarci?
I think you've made a mistake…	Penso ci sia un errore...

The Politecnico di Torino reserves the right to change the information published in this brochure without any prior notice. We constantly update the content of our guide, but we kindly suggest you to visit the international students web site: http://international.polito.it/

This brochure was created to make you comfortable both with Torino and our University.