

Continuing Education in Italy: A Case Study

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Abstract

According to the 'International Standard Classification of Education' (ISCED), 'Continuing Education' is composed of the 'Continuing Primary and Lower Secondary Adult Education' (ISCED1, ISCED2), followed by the 'Adult Education and Training' System (ISCED3), including an 'Upper Secondary Education System' (ISCED4 and finally, the 'Tertiary Education' (ISCED5, ISCED6 and above). In 2016 the percent of 'early leavers' from education and training amounted in Italy to 13.8%, while the EU average amounted to 10.7%. In the same period the attendance to ISCED1-ISCED3 Adult Education Courses (age 25-64) amounted to 8.3%, while the EU average amounted to 10.8%. As for 'Tertiary Education', the percent attainment of a university degree amounted to 29.5% among Italians and to 13.4% among foreigners residing in Italy, while the EU averages amounted to 39.9% and 35.4% respectively. According to the Author, the relatively higher percent of early leavers from education and training in Italy and the relatively low attendance to 'Continuing Education' programs is due to the low employment rate in the Country, particularly significant in the age range 20-34, as a consequence of the severe economic crisis which hit the country in 2008 and still persists, causing the closure of many private enterprises and the block of the turn-over at public educational institutions. In spite of all that, the quality of the Italian Primary, Secondary and Tertiary Education System is of an excellent level, as compared with that of similar institutions all over the world. In Author's opinion, increasing the investment in the educational system would increase the attendance to Secondary and Tertiary Adult Education courses, with a positive feedback on productivity.

Keywords: primary and secondary adult education, adult education and training, upper secondary education, undergraduate and postgraduate tertiary education

1. Introduction

Since the starting of the *Bologna Process* in 1999, the member states of the European Union (EU) have been actively working on the definition of a common educational policy. *Continuing Education* constitutes an important chapter of this joint effort (Pavan, 2010; Milana & Holford, 2014), which involves not only the *Primary, Secondary and Upper Secondary Education*, but also the *Tertiary Education* (subdivided into *Undergraduate and Postgraduate University Education*). Purpose of this research is to examine the present state of the Italian *Continuing Education System*, the *University System* included. As for the *Primary and Secondary Continuing Education*, the adopted methodology consisted of examining the laws and the official reports from the Italian Ministry of Education and the official reports of the European Commission (such as *EUROSTAT* and the yearly edition of the *Education and Training Monitor* from 2012 to 2018) as well as books and research papers by educationalists, such as the volume entitled '*Adult Education Policy and the European Union*', edited in 2014 by Milana F. and Holford J. As for the *Tertiary Education*, the Author adopted as a case study the *University of Padua (UP)*, one of the Italian higher education institutions of excellence (Ha, 2018a). The extremely kind cooperation by the academic staff and the *Statistical Office* allowed the Author to obtain an updated information about the educational system of UP university, what constitutes the added value of the present research. Its limits lie in the fact that UP is only one, although a significant one, of the 68 Italian public universities. The present paper is subdivided into Section 1 (*Introduction*), Section 2 (*Primary, Secondary and Upper Secondary Adult Education and Training in Italy*), Section 3 (*The University of Padua and its Tertiary Education System*) and Section 4 (*Conclusions*). A Section of *References* and an *Appendix* complete the text: the latter is subdivided into Section A1 (*Undergraduate Education at UP*), Section A2 (*Postgraduate Education at UP*) and Section A3 (*International Higher Education Institutions cooperating with UP*).

2. Primary, Secondary and Upper Secondary Adult Education and Training in Italy

Following the EU recommendations, the Italian Ministry of Education enacted in 2010 a *Primary and Secondary School Reform* and, one year later, a *University Reform* (Ministero dell'Istruzione, dell'Università e della Ricerca, 2010, 2011), with the purpose of adapting the Italian education system to the EU requirements. After those two reforms, the Italian government enacted in 2012 a law entitled '*Provisions on the reform of the labor market in a growth perspective*' (*Disposizioni in materia di riforma del mercato del lavoro in una prospettiva di crescita*), foreseeing the creation of a *Territorial Network for Primary and Secondary Adult Education* (*Centri Provinciali di Istruzione per Adulti, CPIA*), open to Italians and foreigners residing in the country. To that network belong public schools and educational institutions from the private sector, while the funds for those activities constitute the *Joint Committee Inter-professional Funds*: they originate from multiple sources (*Governmental and Regional Funds, European Social Funds* and also private funds financed by the *Italian Union of Industrialists*). Additional funds are offered by single industrial enterprises, trade associations of the *Italian Chambers of Commerce*, professional associations and worker unions. A new school reform, known as '*La Buona Scuola*' (*The Good School*), was enacted in 2015, '*to regulate the autonomy of educational institutions by equipping them with the human, material and financial resources, as well as the flexibility needed to implement their training and organizational choices*' (Ministero dell'Istruzione, dell'Università e della Ricerca, 2015). This last reform foresaw the introduction of a three-year planning of the training offer, where the schools indicate the needs of the teaching, administrative, technical and auxiliary staff. The objectives of the reform are, among others, the enhancement of foreign languages' teaching and the strengthening of mathematical, logical and scientific skills.

According to the *International Standard Classification of Education (ISCED)*, the Italian *Primary School System* (ISCED1) consists of 5-grades *Elementary Schools*, followed by a 3-grades *Lower Secondary School System* (ISCED2), a 5-grades *Higher Secondary School System* (ISCED3) and an *Upper Secondary Education System*: the latter is constituted of 3-grade courses at *Higher Technical Institutes (Istituti Tecnici Superiori, ITS)* (ISCED4). The Italian compulsory education starts at 6 years of age and lasts for 10 years. All study cycles (the *Primary*, the *Lower Secondary*, the *Higher Secondary* and the *Upper Secondary* ones) end with a *State Exam*. The transition from the *Elementary School* to *Lower Secondary School*, as well as from *Lower Secondary School* to *Higher Secondary School* and from *Higher Secondary School* to the *Upper Secondary* one or to *University* require passing a *State Exam*. The access to *Higher Technical Institutes* (ISCED4) or to *University* (ISCED5) are subject to passing a subsequent *Admission Exam*. The *Primary* and *Lower Secondary Adult Education* are organized by *Centers for Basic Educational Training* and the courses are taught at *Elementary Schools* or *Junior High Schools*. After attending the courses and passing the related exams, the participants obtain a *Certification of Basic Education*.

The *Higher Secondary Adult Education and Training* is organized by *Centers for Vocational Education*, where evening courses are taught at regional *Vocational Institutes (Istituti Tecnici or Istituti Professionali)*. After attending the courses and passing the related exams, the participants obtain a *Diploma of Technical, Professional or Artistic Education* accompanied, in case of foreign participants, by a *Level 2 Certificate of Linguistic Proficiency in Italian*.

As for the *Upper Secondary Education*, the *Upper Technical Institutes (Istituti Tecnici Superiori, ITS)* were established all over Italy in 2008 (D.P.C.M., 2008) and their structure was partially modified in 2011 (Ministero dell'Istruzione, dell'Università e della Ricerca, 2011). According to the Law, the *ITS* are '*non university institutions of specialized technical education, integrating school learning, training and working activity*'. They are financed by Provinces, Regions or private enterprises and are open to a limited number of students who passed a *State Exam* at *Secondary Education Institutes* and also a specific *ITS Admission Test*. At the end of a biennial or triennial study program a candidate who passes the final exam becomes a certified '*Higher Technician*', a degree corresponding to the 5th Level of the *EU Professional Qualifications Scheme*. The *ITS Technological Areas* are the following:

- Energetic Efficiency,
- Sustainable Mobility,
- New Life Technologies,
- New Technologies for the 'Made in Italy' (subdivided into 'Business Support Services', 'Agri-food Systems', 'House Services', 'Mechanics', 'Fashion'),
- Innovative Technologies for the Preservation of the Cultural Heritage and Tourism,
- Information and Communication Technologies,

with a total number of 380 specialization sectors. The *ITS* are distributed over Italy as follows:

- North-Western Italy (Liguria, Lombardia, Piemonte): 29 units,
- North-Eastern Italy (Friuli, Veneto): 11 units,
- Central Italy (Abruzzo, Emilia, Toscana, Marche, Umbria) : 31 units,
- Southern Italy (Calabria, Campania, Puglia): 14 units,
- Sicily: 5 units,
- Sardinia: 3 units.

According to the *Education and Training Monitor* (European Commission, 2013), during the school year 2011/12 over 71,000 Italian and foreign adults attended the courses of *Primary and Lower Secondary Education* (OECD1, OECD2) while about 68,000 people attended the courses of *Higher Secondary Education* (OECD3) In the same period the total population permanently resident in Italy amounted to over 55,800,000 people and that of foreigners amounted to over 4,380,000 people. The number of Italians with a diploma of 1st grade amounted to 16,706,879 people (29.9%) and that of those with a diploma of *Higher Secondary Education* amounted to 13,706,879 (24.5%). About 5.7 % of Italian population in the age range 25-64 attended the *Adult Education and Training* courses of 1st or 2nd Level, while the proportion of foreign citizen resident in Italy who attended the *Adult Education and Training* courses amounted to 3.4 %. In the same period the EU weighted average proportion of attendances amounted to 9.2 %. The attendance to the courses of *Adult education and training* slightly increased over the years, reaching in 2017 the 8.3%, while the EU average proportion for that year amounted to 10.8% (European Commission, 2017).

As for the *Upper Secondary Education*, according to the *National Institute of Documentation, Innovation, Educational Research (Istituto Nazionale di Documentazione, Innovazione, Ricerca Educativa)* (I.N.D.I.R.E., 2017), the total number of *ITS* in 2017 amounted to 93 units, with 8,232 students and 6216 already certified *Higher Technicians* (corresponding to 74.8% of the total number of participants to the final exam). As for the working position of the 1767 *ITS* students who graduated in 2015, a study published by I.N.D.I.R.E (2017) gave the following results: about 27.9% of them got a permanent working contract, 38.3% got a temporary working contract, 12.9% were in apprenticeship, 17.6 % were still unemployed and 3.7% registered to University (European Commission, 2017). In 2013 the percent value of *Early leavers from education and training* (age 18-24) amounted in Italy to 16.8% and to 13.8% in 2016, while the corresponding EU averages were 11.9% in 2013 and 10.7% in 2016. While the proportion of attainment of *Primary and Lower Secondary Education* among Italians is in line with the average European values, the relatively low participation to *Secondary Continuing Education and Training* courses, as compared with the corresponding EU values, can be explained with the low levels of employment in Italy in the period 2011-2016, as a consequence of the economic crisis that struck Italy and the Southern European Countries in 2008, whose effects still persist. A confirmation of that is offered by the proportion of ‘*Not in Employment, Education, or Training*’ (*NEET*)’ people in the age range 15-24 in Italy, which in 2016 reached 19.9%, while the EU average amounted to 14.2% .

Before concluding this Section, let us quote disconcerting data concerning the average proficiency levels in *Mathematics, Science and Reading* (Italian texts) among students attending Italian *Secondary Schools* (Education and Training Monitor, 2017): the percent values of 15-year old people with underachievement in *Reading* amounted in 2013 to 19.5%, 24.7% in *Mathematics* and 18.7% in *Science*, while the corresponding EU average values amounted to 17.8% in *Reading*, 22.1% in *Mathematics* and 16.6% in *Science*. In 2016 those percent rates went up to 21.0% in *Reading*, 23.3% in *Mathematics* and 23.2% in *Science*, while the EU weighted average values amounted to 19.7%, 22.2% and 20.6% respectively. According to the European Commission (EC), this under-proficiency should be attributed, at least partially, to the increasing presence in public schools of children of foreign immigrants with a low schooling level (Education and Training Monitor, 2017). According to the Author, special teaching courses in *Primary and Secondary Adult Education for Foreigners* should be introduced at regional level in order to solve this problem.

3. The University of Padua (UP) and its Tertiary Education System

UP is the second oldest Italian university and one of the oldest of the Western world: it was established in 1222 by initiative of the *Brotherhood of Teachers and Students* of the town municipality (*Repubblica di Padova*). Between the last quarter of the 16th century and the first half of the 17th century this university saw the outbreak of the *Scientific Revolution*, through Galileo Galilei (1564 – 1642), born in Pisa and for 18 years professor of Mathematics, Physics and Astronomy at UP, Andrea Vesalio (1514 – 1564), born in Bruxelles and author of the first modern Anatomy Atlas entitled ‘*De humani corporis fabrica*’ and others (Whitehouse, 2009).

UP is subdivided into *Departments*, whose list is given in Section A1 of the Appendix. *Internationalization* has always been an important priority for UP: with its bilateral agreements with foreign higher education institutions (see Section A3 of the Appendix), it established long-standing international co-operations in Europe, Asia, Africa, Australia, North and South America, encouraging international exchanges of students, academic and technical staff and the development of joint research programs (Ha, 2018b).

The *Undergraduate and Postgraduate Courses* at UP are delivered by the following *Schools*: School of Agriculture and Veterinary Medicine, School of Economics and Political Sciences, Law School, School of Engineering, School of Health Sciences, School of Science, School of Psychology, School of Humanities, Social Sciences and Cultural Heritage. During the Academic Year 2016/17 the teaching/research staff of UP amounted to 2,092 units (of whom 445 were *Full Professors (Professori Ordinari)*, 887 Associate Professors (*Professori Associati*), 541 *Researchers with tenure (Ricercatori di Ruolo)* and 179 *Researchers with a temporary employment contract (Ricercatori a Contratto)*. The total number of students amounted in the same period to 57,404 units, subdivided into *Undergraduate Students (35,227)*, *Biennial and Single Cycle Master Degree Students (18,569)*, *Post-Master Higher Specialization Students (1,639)*, *Doctoral Students (1,305)*, *Lifelong Learning Students (574)*.

The total number of graduates from the *Lower Tertiary Education System* at UP during the Academic Year 2016/17 amounted to 7,592 units (of whom 333 were Foreigners), distributed as indicated in Table 1, where the Undergraduate Courses have been subdivided into the following Areas: A1 (Agriculture & Veterinary, Environmental Sciences, Science, Engineering), A2 (Health Sciences), A3 (Law, Economics, Psychology, Humanities, Preservation of the Cultural Heritage).

Table 1. Lower Tertiary Education System (Lauree Triennali) at UP

<i>Areas</i>	<i>Italian graduates</i>	<i>Foreign graduates</i>	<i>Total</i>
<i>A1</i>	2,891	51	2,942
<i>A2</i>	1,064	31	1,095
<i>A3</i>	3,304	251	3,555

The Postgraduate Higher Education consists of the following Courses (see Section A2 of the Appendix):

- *1-year Master Degrees Courses of First Level (Master di 1.o Livello)*, to be followed after achievement of a Bachelor Degree Diploma (Diploma di Laurea Triennale),
- *2-year Master Degrees Courses (Lauree Magistrali Biennali)*, to be followed after achievement of a Bachelor Degree and the passing of an admission test,
- *Single-cycle Master Degrees Courses (Lauree Magistrali a Ciclo Unico)*, to be followed after achievement of the High School Diploma,
- *1-year Master Degrees Courses of Second Level (Master di 2.o Livello)*, to be followed after achievement of a 2-year Master Degree Diploma (Diploma di Laurea Magistrale),
- *Higher Specialization Degree Courses (Corsi di Specializzazione)*,
- *Doctoral Degrees (Dottorati)*, to be followed after achievement of a 2-year Master Degree or a Single-cycle Master Degree and after passing an admission test,
- *Lifelong Training Courses (Corsi di perfezionamento e aggiornamento)*.

Let us examine them in greater detail:

A) *1-year Master Degrees of First Level (Master di Primo Livello)*

During the Academic Year 2016/17 the total number of graduates amounted to 1,353 units (of whom 51 Foreigners), subdivided as follows:

Table 2. 1-year Master Degrees of First Level (Master di Primo Livello) at UP

<i>Areas</i>	<i>Italian graduates</i>	<i>Foreign graduates</i>	<i>Total</i>
<i>A1</i>	907	11	918
<i>A2</i>	275	20	295
<i>A3</i>	119	20	139

An update to 2017 brought the total number of graduates to 1,017, of whom 375 Foreigners, attending the Courses of 'Bio-building and management of real estate projects in Africa', 'Integrated Management of water resources and environmental reclamation', 'Technologies for sustainable and intercultural waste management in the African countries', 'Solar energy technologies in the African countries (MATES).

B) 2-year Master Degrees Courses (Corsi di Laurea Magistrale)

The total number of graduates in 2017 amounted to 4,077 units, of whom 148 were Foreigners, distributed as follows:

Table 3. 2-year Master Degree Courses (Corsi di Laurea Magistrale) at UP

<i>Areas</i>	<i>Italian graduates</i>	<i>Foreign graduates</i>	<i>Total</i>
<i>A1</i>	2,035	41	2,076
<i>A2</i>	172	3	175
<i>A3</i>	1,722	104	1,826

C) Single-cycle Master Degrees Courses (Master a ciclo unico)

In 2017 the total number of Biennial Master's School graduates amounted to 1,173 graduates (of whom 25 were Foreigners), distributed as shown in Tables IVa and IVb:

Table 4a. Single-cycle Health Care Master Degrees Courses at UP

<i>Schools</i>	<i>Italian graduates</i>	<i>Foreign graduates</i>	<i>Total</i>
<i>Medicine and Surgery</i> (6-year Course)	332	8	340
<i>Dentistry and Dental Prosthesis</i> (6 year Course)	26	3	29
<i>Veterinary</i> (5 year Course)	54	1	55

Table 4b. Other 5-year Single-cycle Master Degrees Courses at UP

<i>Schools</i>	<i>Italian graduates</i>	<i>Foreign graduates</i>	<i>Total</i>
<i>Law, Primary Education Sciences</i> (5-year Course)	519	5	524
<i>Construction Engineering – Architecture</i> (5-year Course)	63	3	66
<i>Pharmacy</i> (6-year Course) <i>Chemistry and Pharmaceutical Chemistry</i> (5-year Course)	154	5	159

D) *1-year Master Degrees Courses of Second Level (Master di Secondo Livello).*

In 2016 the total number of *1-year Master Degree Courses of Second Level* graduates amounted to 118 units (of whom 4 were Foreigners), distributed as follows:

Table 5. 1-year Master Degree Courses of Second Level (Master di Secondo Livello) at UP

Sectors	Italian graduates	Foreign graduates	Total
<i>Healthcare for Physicians & Healthcare for Non-physicians</i>	60	4	64
<i>Scientific Innovation</i>	25	0	25
<i>Psychology, Social Sciences, Legal Professions</i>	29	0	29

An update to the year 2017 brought the total number of graduates to 521 graduates, of whom 18 were Foreigners.

E) *Post-master Higher Specialization Schools (Corsi di Specializzazione)*

In 2016 the total number of delivered *Higher Specialization Degrees* amounted to 304 specialists (of whom 10 were Foreigners), subdivided as follows:

Table 6. Post-master Higher Specialization Courses (Corsi di Specializzazione) at UP

Specialties	Italian graduates	Foreign graduates	Total
<i>Healthcare for Physicians (5-years/4-years Courses)</i>	227	10	237
<i>Preservation of Archaeological and Historic-artistic Heritage (2-year Courses)</i>	19	0	19
<i>Legal Professions (2-year Courses)</i>	48	0	48

To those specialties, it must be added a course on '*Evaluation and Management of Chemical Risk (2-year Course)*', with a total number of 28 Italian and no foreign graduates.

An update to 2017 brought the total number of specialists to 338, of whom 17 were Foreigners.

F) *3-year Doctoral Degrees (Dottorati di Ricerca)*

In 2016 the total number of delivered Doctoral Degrees amounted to 442 units (of whom 52 were Foreigners), distributed as follows:

Table 7. 3-year Doctoral Degrees

Macro-areas	Italian Research Doctors	Foreign Research Doctors	Total
<i>Macro-area 1:(Mathematics, Physics & Astronomy, Engineering, Information Sciences, Earth Sciences)</i>	128	24	152
<i>Macro-area 2 (Life Sciences)</i>	153	12	165
<i>Macro-area 3 (Human and Social Sciences)</i>	109	16	125

An update to 2017 brought the total number of *Research Doctors (Ph.D.)* to 430 graduates, of whom 61 were Foreigners.

G) *Lifelong Training Courses (Corsi di Perfezionamento)*

During the Academic year 2016/17 the total number of professionals attending the *Yearly Postgraduate Professional Updating Courses* amounted to 469 units (461 Italians, 8 Foreigners), distributed as follows:

Table 8. Lifelong Training Courses

<i>Sectors</i>	<i>Italian graduates</i>	<i>Foreign graduates</i>	<i>Total</i>
<i>Healthcare for Physicians</i>	230	8	238
<i>Industrial Engineering</i>	18	0	18
<i>Legal Professions, Psychology & Social Sciences, Teacher Training</i>	213	0	213

An update to 2017 brought the total number of attendees to 574, of whom 8 were Foreigners.

This detailed exposition of the state of *Continuing Education* at UP highlights the excellent quality of its *Tertiary Education System*, capable of attracting students from many parts of the world, as certified by the biennial reports of the *National Agency for the Evaluation of the University System and Scientific Research (Agenzia Nazionale per la Valutazione del Sistema Universitario)*, composed of independent Italian and international scholars (A.N.V.U.R., 2018).

4. Conclusions

Starting with the *Primary and Secondary Education System*, the low levels of attainment of a diploma in Italy refer mainly to the population of Foreigners residing in Italy, among which the proportion of *Early leavers from Education and Training* amounted in 2016 to 30.0%, while it amounted to 11.8% among Italians, to be compared with 9.8% of the EU average. In this regards we should recall the following remark expressed by the European Commission: '*Italian schools are at the forefront of receiving migrant children, but their full inclusion is hindered by social stratification*'. As for *Tertiary Education*, a certain discrepancy exists between the excellence of the Italian *Tertiary Education System*, as evidenced by the data referring to the University of Padua (certified by the *National Agency for the Evaluation of the University System and Scientific Research* in 2018) and the relatively low rate of achievers of a *University Diploma*, which amounted in 2016 to 29.5%, while the EU average amounted to 39.9%. A possible reason of that should be attributed, according to the Author, to the reduced employment rate of younger people in Italy, which started with the economic crisis of 2008 and whose effects still persist. The employment rate of people in the age range 20 – 34 in Italy amounted indeed to 42.4% in 2016, while the EU average amounted to 76.9%. In addition to that, the Italian government introduced in 2008 a block of turnover (up to 80%) in public universities (Ministero dell'Economia e Della Finanza, 2008). That block had as a consequence a *brain drain* of Italians with a *Tertiary Education Diploma*, in an age range between 30 and 40 years, toward Northern European countries and North America (Nava, 2017). As for the low attendance to *Adult Education and Training* courses by Italians and Foreigners, it could be explained anew through the de-motivating action exerted by the lower employment rate in Italy, as compared with that of EU. Effective measures should be introduced as soon as possible by the government to support its entire Public Education System, *Adult Education* included. All that will not be simple, but Italy already gave an outstanding example of improvement of its social standards during its post-war period of '*Reconstruction*' (*Ricostruzione*), from 1946 to 1960. A good omen is constituted by the recent attribution of the *Field Medal* in Applied Mathematics to the young Italian Mathematician Alessio Figalli, who graduated at the *Higher Normal University (Scuola Normale Superiore)* in Pisa and later became Professor at the *Federal Polytechnic of Zurich*, for his outstanding contributions in the field of *Optimal Transportation Theory*. Many other young Italian scholars are presently working at prestigious research centers all over the world. Let us hope for the best!

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Appendix:

A1. Undergraduate Education at UP

UP is subdivided into the following Departments: Department of Agronomy, Food, Natural Resources, Animals, and the Environment, Department of Biology, Department of Animal Medicine, Production and Health, Department of Biomedical Sciences, Department of Cardiac, Thoracic and Vascular Sciences, Department of Chemical Sciences, Department of Civil, Environmental and Architectural Engineering, Department of Comparative Biomedicine and Food Science, Department of Cultural Heritage: Archaeology and History of Art, Cinema, and Music, Department of Developmental Psychology and Socialization, Department of Economics and Management, Department of General Psychology, Department of Geosciences, Department of Historical and Geographic Sciences and the Ancient World, Department of Industrial Engineering, Department of Information Engineering, Department of Land, Environment, Agriculture, and Forestry, Department of Linguistic and Literary Studies, Department of Management and Engineering, Department of Mathematics, Department of Pharmaceutical and Pharmacological Sciences, Department of Philosophy, Sociology, Education, and Applied Psychology, Department of Physics and Astronomy, Department of Political Science, Law and International Studies, Department of Private Law and Critique of Law, Department of Public, International and Community Law, Department of Statistical Sciences, Department of Surgery, Oncology and Gastroenterology, Department of Women's and Children's Health.

The *Tertiary Education System* at UP is subdivided as follows:

- *School of Agricultural Sciences and Veterinary Medicine*, which offers the following *Triennial Degree Courses*: 'Animal', 'Restructuring of the Territory and Protection of the Landscape', 'Sciences and Culture of Gastronomy and Catering', 'Agricultural Sciences and Technologies', 'Food Sciences and Technologies' (Scienze e tecnologie alimentari), 'Animal Sciences and Technologies' (Scienze e Tecnologie Animali), 'Viticulural and Enological Sciences and Technologies' (Scienze e tecnologie viticole ed enologiche), 'Hygienic-sanitary Safety of Food' (Sicurezza igienico-sanitaria degli alimenti), 'Forest and Environmental Technologies'(Tecnologie forestali e ambientali).
- *School of Economy and Political Sciences*, which offers the following *Triennial Degree Courses*: 'Law and Economy', 'Economy', 'Political Sciences', 'Political Sciences, International relations and Human Rights', 'Social Services'.
- *Law School*, which offers the following *Triennial Degree Course*: 'Labor Consultant'.
- *School of Engineering*, which offers the following *Triennial Degree Courses*: 'Aerospace Engineering', 'Biomedical Engineering', 'Chemical and Materials Engineering', 'Civil Engineering', 'Energy Engineering', 'Information Engineering', 'Product Innovation Engineering', 'Electronic Engineering', 'Management Engineering', 'Computer engineering', 'Mechatronics Engineering', 'Environment and Territory Engineering', 'Building and Territory Techniques and Management'.
- *School of Health Sciences*, which offers the following *Triennial Degree Courses*: 'Health Care', 'Dietetics', 'Professional Education', 'Physiotherapy', 'Dental care', 'Nursing', 'Speech therapy', 'Orthoptics and Ophthalmological Assistance', 'Obstetrics', 'Applied Pharmaceutical Sciences', 'Motorial Sciences', 'Audioprosthetic Techniques', 'Prevention Techniques in the Environment and in the Workplace', 'Biomedical Laboratory Techniques', 'Neuro-physio-pathology Techniques', 'Techniques of Medical Radiology', 'Techniques for Imaging and Radiotherapy', 'Techniques of the Neuro- and Psycho-motor in the Evolutive Age', 'Occupational Therapy'.
- *School of Science*, which offers the following *Triennial Degree Courses*: 'Astronomy', 'Biology', 'Chemistry', 'Computer Science', 'Environmental Sciences and Technologies', 'Geosciences', 'Industrial Chemistry', 'Mathematics', 'Molecular Biology', 'Natural Sciences', 'Optics and Optometry', 'Physics', 'Science of Materials', 'Statistics for Economy and Business', 'Statistics for Science and Technologies'.
- *School of Psychology*, which offers the following *Triennial Degree Courses*: 'Psychological Sciences', 'Psychological Sciences and Techniques', 'Psychological, Cognitive and Psycho-biological Sciences', 'Psychological Sciences of the Personality Development and Inter-personal Relations', 'Social and Work Psychological Sciences'.

- *School of Human and Social Sciences and Cultural Heritage*, which offers the following *Triennial Degree Courses*: ‘Archeology’, ‘Communication Theory’, ‘Disciplines of the Arts, Music and Entertainment’, ‘Philosophy’, ‘Humanities’, ‘Languages, Literature and Cultural Mediation’, ‘Design and Management of Cultural Tourism’, ‘Education and Training Sciences’, ‘Sociology’, ‘History’, ‘History and Protection of Artistic and Musical Heritage’ >

A2. Postgraduate Education at UP

The Postgraduate Education System at UP is subdivided as follows:

- A) *Annual Master’s Degree Courses of First Level (Master di Primo Livello)* The admission to these courses requires the possession of a *Triennial University Degree* and passing a selection exam. The courses are subdivided as follows:

Finance, Law and International relations

Finance, Business and Management: Industry specific fragrance in the cosmetic sector, European Integration: Community Policies and Design: International Business for small and medium enterprises, International finance and commerce),

Scientific Innovation and Technology Transfer

Strategic environmental management, Digital innovator in public administration and schools, Project Management & Innovation Management, Surface Treatments for Industrial Applications,

The Mind and the Psycho-physical Well-being

Scientific and methodological bases of personal training, architecture and landscape psychology,

Preservation, Transmission of Culture and Training

Communication of the sciences, Death studies and the end of life for the interventions of support, Design of the tourist offer, TV screening techniques, intercultural studies, knowledge and practices for the reception of asylum seekers, Theories and techniques for the educational intervention aimed at the person suffering from a chronic pathology),

Health, Environment and Territory

Health care for ostomate and incontinent patients, Biostatistics for clinical research and scientific publication, Criminology: critical and social security, Deviance, institutions and psychosocial interactions, Diagnosis and surgical therapy of congenital heart disease, Director of urban security and combating violence, Pain and Pediatric Palliative Care, Basic and advanced Echocardiography, Basic and advanced Electrophysiology, Epidemiology and Community Knowledge, Management of skin lesions and difficult wounds (wound care), Governance of local development networks, Occupational and environmental hygiene, Specialist nurse in pathology and endoscopy of the digestive system, The pathologist's assistant: autopsy, histological and molecular techniques in pathological anatomy and forensic medicine, Rehabilitation of communication in auditory deficits, Clinical experimentation in oncology: clinical, managerial and operative aspects, Nurse case manager, The forensic nurse, Methodology of research in nutrition, Population nutrition, education and food safety, Patient safety in clinical practice, Prevention and emergency in mountain territory and high altitude, “Prosecco” wine, Organization and management of educational institutions in multicultural contexts).

B) *Biennial Master’s Degrees Courses (Lauree Magistrali)*

The admission to these courses requires possession of the *Triennial University Diploma* and passing a selection exam. The courses are subdivided as follows.

School of Agricultural Sciences and Veterinary:

Biotechnology for nutrition, Food Sciences and Technologies, Animal Sciences and Technologies, Sciences and Technologies for Environment and Territory, Forestry and Environmental Sciences, Sustainable Agriculture, Viticulture, Enology and Wine Markets.

School of Economy and Political Sciences:

Business Administration, Economics and Law, Economics and Finance, European and Global Studies, Entrepreneurship and Innovation, European and Global Studies, Human rights and multi-level governance, Innovation and Social Service, ‘International Relations and Diplomacy, Government Sciences and Public Policies.’

School of Engineering:

Bioengineering, Environmental Engineering, ICT for Internet and Multimedia, Aerospace Engineering, Chemical Engineering and Industrial Processes, Civil Engineering, Materials Engineering, Automation Engineering, Electric Engineering, Product Innovation Engineering, Civil and Industrial Safety Engineering, Electronic Engineering, Energetic Engineering, Management Engineering, Computer Engineering, Mechanical Engineering, Mechatronics Engineering, Mathematical Engineering, Clinical Engineering.

School of Human and Social Sciences and Cultural Heritage:

Philosophy.

School for Healthcare: Medical Biotechnologies, Health Professions Sciences: Diagnostic Techniques, Sciences and Techniques of Preventive and Adapted Motorial Activity, Nursing and Obstetric Sciences, Rehabilitation Sciences of Health Professions.

School of Psychology:

Cognitive Neurosciences and Clinical Neuropsychology, Neurosciences and Neuropsychological Rehabilitation, Clinical Psychology, Clinical Psychology of Development, Clinical-dynamic Psychology, Applied Cognitive Psychology, Developmental Psychology and Education, Psychology of the Community, Promotion of Wellbeing and Social Change, Social psychology, Work and Communication, Clinical Psychology of Development.

School of Science:

Astronomy, Evolutionary Biology, Marine Biology, Health Biology, Industrial Bio-technologies, Chemistry, Industrial Chemistry, Data Science, Geology and Technical Geology, Computer Science, Mathematics, Molecular Biology, Physics, Data Physics, Materials Science, Natural Sciences, Statistical Sciences.

School of Human and Social Sciences and Cultural Heritage:

Cultures, Education and Global Society, Modern Philology: French and Italian Studies, Classic Letters and Ancient History, European and American Languages and Literatures, Modern languages for Communication and International Cooperation, Linguistics.

C) Yearly Master's Degree Courses of Second Level (Master di Secondo Livello)

The admission to these courses requires the possession of a *Triennial University Degree* and passing a selection exam. The courses are as follows.

Finance, Law and International Relations: 'International Business Lawyer', 'Innovation, planning and evaluation of policies and services'.

Scientific innovation and technology transfer: 'Building Information Modeling for Digitization of Assisted Planning', 'Forms of Contemporary Living', 'Planning, Design, Construction and Management of Airport Infrastructures'.

The mind and the psycho-physical well-being: 'Models and methodologies of intervention for *Special Educational Needs (SEN)*', 'Specific learning disorders and gifted children', 'Clinical neuropsychology', 'Psychology of the environment and longevity', 'Basic psychologist in the territory', 'Psychopathology of learning', 'Psychopathology and forensic neuropsychology', 'Developmental psychopathologies'.

Preservation, Transmission of culture and Training

'Conservation, management and enhancement of the industrial heritage', 'Inclusion and social innovation', 'Mediation as an operative tool within the family, criminal, community, civil and commercial fields', 'Evaluation, training and development of human resources'. 'Organizational analysis and interventions, risk prevention'.

Health, Environment and Territory

'Andrology and reproduction medicine', 'Advanced biostatistics for clinical research', 'Sport cardiology', 'Plastic aesthetic surgery', 'Pharmaco-epidemiology and integrated care assessment', 'Integrated risk management and health claims', 'Occupational and environmental hygiene', 'Specialist nurse in pathology and endoscopy of the digestive system', 'The pathologist's assistant: autoptic, histological and molecular techniques in pathological anatomy and forensic medicine', 'Rehabilitation of communication ability in hearing impairments', 'Clinical experimentation in oncology: aspects clinical, managerial and operative', 'Machine learning and big data in precision medicine and biomedical research', 'Pain therapy and Pediatric Palliative Care', 'Underwater and hyperbaric medicine', 'Lingual orthodontics', 'Cardiovascular pathology', 'Specialized pediatrics in pediatric cardiology', 'Pediatric gastroenterology', 'Neurology and clinical neurophysiology of the pediatric age', 'Pediatric rheumatology',

'Pediatric onco-hematology', 'Pneumology and pediatric allergology', 'Hereditary metabolic diseases', 'Pediatric nephrology', 'Emergency pediatrics', 'Pituitary and adrenal diseases', 'Food quality and safety', 'Orthodontic sciences with straight arch technique', 'Advanced heart failure', 'Sedation and emergency in dentistry', '*Human Centered Project: the holistic treatment of the dental patient*', 'Medically assisted procreation techniques and human reproduction sciences', 'Intensive care in cardiology'.

D) *Single-cycle Master's Degree Courses (Lauree Magistrali a ciclo unico)*

The admission to these courses requires possession of the State High School Diploma and passing a selection exam.

6-year Single Cycle Master's Degree Courses

School of Medicine: Medicine and Surgery, Dentistry and Dental Prosthesis.

5-year Single Cycle Master's Degree Courses

Law School: Law (it can be shared with the *Paris 2 Panthéon-Assas University* as a double Master's Course).

School of Healthcare: Chemistry and Pharmaceutical Technologies, Pharmacy.

School of Engineering: Civil Engineering – Architecture.

School of Psychology: Primary Education Sciences.

E) *Post-master Higher Specialization Schools (Scuole di Specializzazione)*

These *Schools* have Courses with a duration spanning from 5 to 2 years each, which are subdivided as follows:

Healthcare area for Physicians

5-year Courses: Allergology and Clinical Immunology, 'Anesthesia, reanimation, intensive care and pain', Cardiac Surgery, General Surgery, Pediatric Surgery, 'Plastic, reconstructive and aesthetic surgery', Emergency Medicine, Internal Medicine, Thoracic Surgery, Vascular Surgery, Neurosurgery, Medical Oncology, Orthopedics and Traumatology, Pediatrics, Urology.

4-year Courses: Pathological Anatomy, Audiology and Phoniatics, Dermatology and Venereology, 'Hematology, Endocrinology and Metabolic diseases', Medical Genetics, Geriatrics, Gynecology and Obstetrics, Hygiene and preventive medicine, Diseases of the cardiovascular system, Diseases of the digestive tract, Diseases of the respiratory tract, Infectious and tropical diseases, Occupational medicine, Pathological anatomy, Audiology and phoniatics, Legal Medicine.

Healthcare area for Non-physicians (4-year Courses)

Hospital pharmacy, Medical genetics, 'Microbiology and virology, Clinical pathology and clinical biochemistry.

Healthcare area for Non-physicians (3-year Courses)

Medical Physics, Pediatric dentistry, Orthodontics.

Area for Psychologists (5-year Courses):

Neuropsychology, Clinical psychology, Life cycle psychology.

Veterinary Area (3-year Courses)

Breeding, hygiene, pathology of aquatic species and control of derived products, Inspection of food of animal origin, Animal health, livestock breeding and livestock production.

Preservation of the Archaeological Heritage (2-year Course with the same denomination),

Preservation of the Historical and Artistic Heritage (2-year Course with the same denomination),

Legal Professions (2-year Course with the same denomination),

Evaluation and Management of Chemical Risk (2-year Course with the same denomination).

F) *Doctoral Research Degree Courses*

Macro-area 1: Mathematics, Physics & Astronomy, Engineering, Information Sciences, Earth Sciences

Astronomy, Civil, Environmental and Architectural Engineering, Earth Sciences Fusion Science and Engineering, Industrial Engineering, Information Engineering, Management Engineering and Real Estate Economics, Mathematical Sciences, Mechatronics and Product Innovation Engineering,

Molecular Sciences, Physics, Science & Engineering of Materials and Nanostructures, Space Sciences, Technologies and Measurements, Statistical Science.

Macro-area 2: Life Sciences

Animal and Food Science, Biosciences, Crop Science, Psychological Sciences.

Macro-area 3: Human and Social Sciences

Economics and Management, Historical, Geographical, Anthropological Studies, History, Criticism and Preservation of Cultural Heritage, Human Rights, Society, and Multi-level Governance, International Law and Private and Labour Law, Law, Linguistic, Philological and Literary Sciences

Pedagogical, Educational and Instructional Sciences, Philosophy

Interdisciplinary Programs

Brain, Mind and Computer Science, Land, Environment, Resources and Health, Social Sciences: Interactions, Communication, Cultural Constructions

A3. List of International Higher Education Institutions cooperating with UP

The list of Higher Education Institutions all over the world, with which UP has established cooperation agreements in what refers to the international student mobility and joint research cooperation is the following:

Albania	Universiteti i Mjekesise Tirane
Algeria	Université M'hamed Bougara de Boumerdès
Argentina	Pontificia Universidad Catolica Argentina
Argentina	Universidad de Buenos Aires
Argentina	Universidad Nacional de Cordoba
Argentina	Universidad Nacional de Rio Negro
Argentina	Universidad Nacional de San Martin
Australia	University of New South Wales
Australia	University of Sydney
Bolivia	Universidad Mayor de San Andres (CIDES)
Brazil	Pontificia Universidade Catolica do Parana'
Brazil	Universidade de Caxias do Sul
Brazil	Universidade de Passo Fundo
Brazil	Universidade de Sao Paulo
Brazil	Universidade do Vale do Rio dos Sinos UNISINOS
Brazil	Universidade Estadual de Campinas
Brazil	Universidade Federal da Paraiba
Brazil	Universidade Federal de Minas Gerais
Brazil	Universidade Federal de Santa Catarina
Brazil	Universidade Federal do Estado da Bahia - UNEB
Brazil	Universidade Federal do Estado do Rio de Janeiro
Cameroun	Ecole Nationale Superieure des Travaux Publics de Yaounde
Canada	Concordia University
Canada	École de technologie supérieure de Montréal ÉTS
Canada	Sir Sandford Fleming College
Canada	Université de Montreal
Canada	University of British Columbia

Chile	Universidad Austral de Chile
Chile	Universidad de Atacama
Chile	Universidad de Chile
China	China Pharmaceutical University
China	Guangzhou University
China	Jiangsu University
China	Northwest University
China	Renmin University - School of Philosophy
China	Shanghai Institute of Ceramics, Chinese Academy of Sciences SICCAS
China	ShanghaiTech University
Colombia	Universidad del Rosario
Colombia	Universidad del Rosario
India	Datta Meghe Institute of Medical Sciences University
Indonesia	Universitas Sumatera Utara
Israel	University of Haifa
Japan	Hokkaido University
Japan	Kochi University
Japan	Mie University
Japan	Nagoya University
Japan	Tokyo University of Agriculture and Technology
Japan	Toyohashi University of Technology
Japan	Waseda University
Japan	Yokohama National University
Kazakhstan	Kostanay State University named after A.Baitursynov
Mexico	Corporación Mexicana de Investigación en Materiales COMIMSA
Mexico	Universidad de Colima
Mexico	Instituto Tecnológico de Saltillo
Morocco	Université Internationale de Rabat
Nepal	Tribhuvan University
Paraguay	Universidad Nacional de Asuncion
Russian Federation	Lomonosov Moscow State University
Russian Federation	Magnitogorsk State Technical University
Russian Federation	National Research University Higher School of Economics
Russian Federation	National Research University Higher School of Economics
Russian Federation	Novosibirsk State Technical University
Russian federation	Tomsk State University
Russian Federation	Samara State Technical University
South Korea	Sogang University
South Korea	Sungkyunkwan University

South Korea	Seoul National University
Taiwan	National Chiao Tung University
Taiwas	National Tsing Hua University
Tajikistan	Academy of Sciences of the Republic of Tajikistan
USA	Boston University
USA	Duke University
USA	Harvard University, Harvard Medical School
USA	San Diego State University
USA	Texas A&M University
USA	University at Albany-SUNY
USA	University of California, Davis
USA	University of Michigan
USA	Wake Forest University - School of Law
USA	Old Dominion University