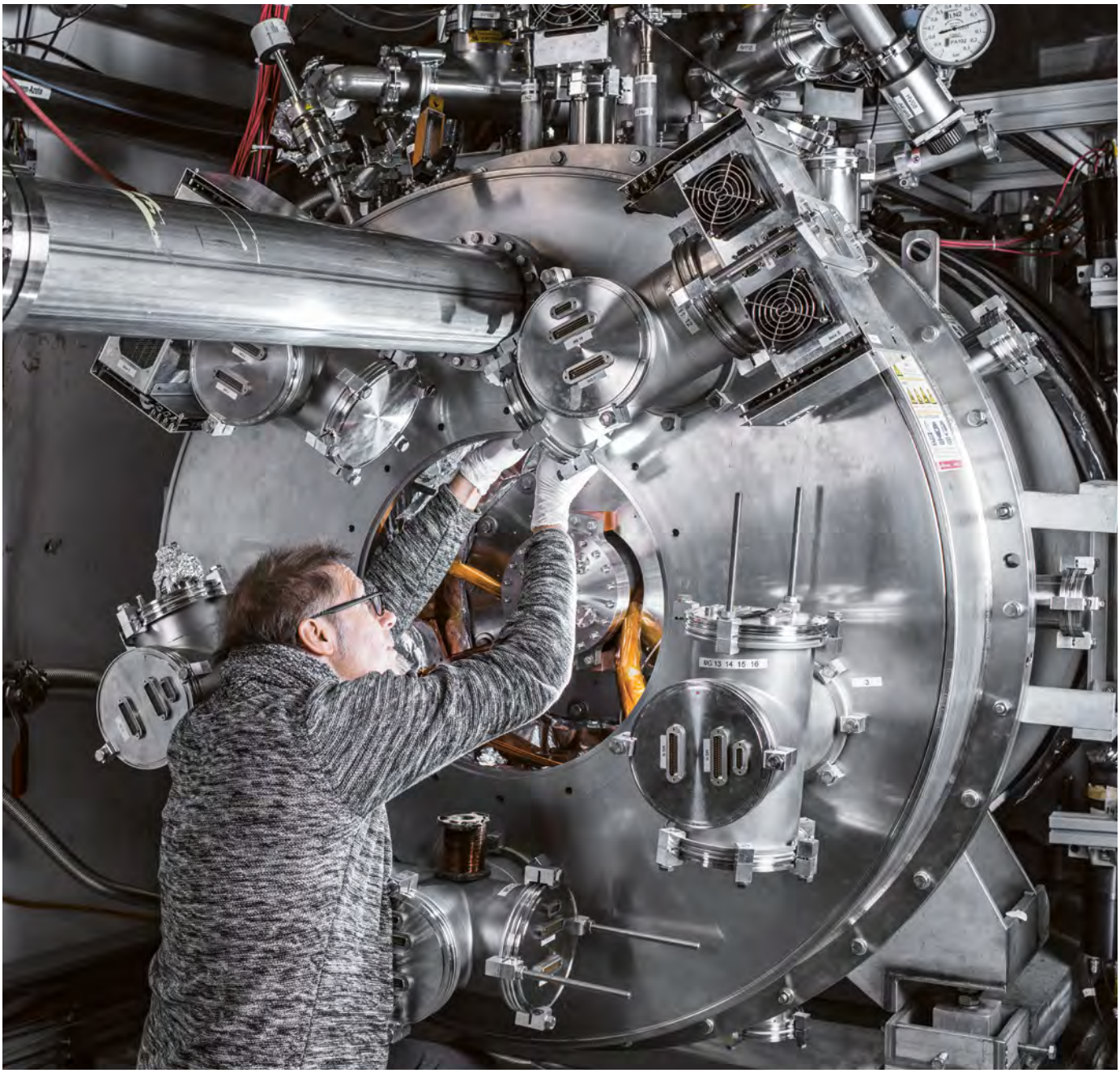


EDUCATION AND RESEARCH

12

Image
CERN, Geneva

For a country like Switzerland with few natural resources, a well-educated workforce and constant innovation are its most important capital. Swiss education and research policy is designed accordingly. Switzerland's public schools, universities, postgraduate programs, and international private and boarding schools are famous worldwide for their quality. The country's federal structure also ensures both high quality and proximity of the business world and research institutions to the educational system. One special feature of Swiss education is the dual training system: students have a choice between the traditional educational path at high schools and universities or, on the other hand, industrial vocations and careers in the service sector, where they receive hands-on training on the job.

12.1 SCHOOLING AND VOCATIONAL TRAINING

Switzerland's dual vocational training system is unique worldwide and provides the country with a highly qualified and innovative workforce and thus a leading position in the global economy.

Under the Swiss system, the cantons are responsible for the quality and type of education (basic education, universities, universities of applied sciences) within their territory. Only the Swiss Federal Institutes of Technology (ETH/EPFL) are under federal direction. Various coordinating bodies ensure that the educational and training plans are harmonized between cantons.

www.edk.ch
Swiss Conference of Cantonal Ministers of Education (EDK)
Languages: German, English, French, Italian

www.educa.ch
Swiss education server
Languages: German, English, French, Italian

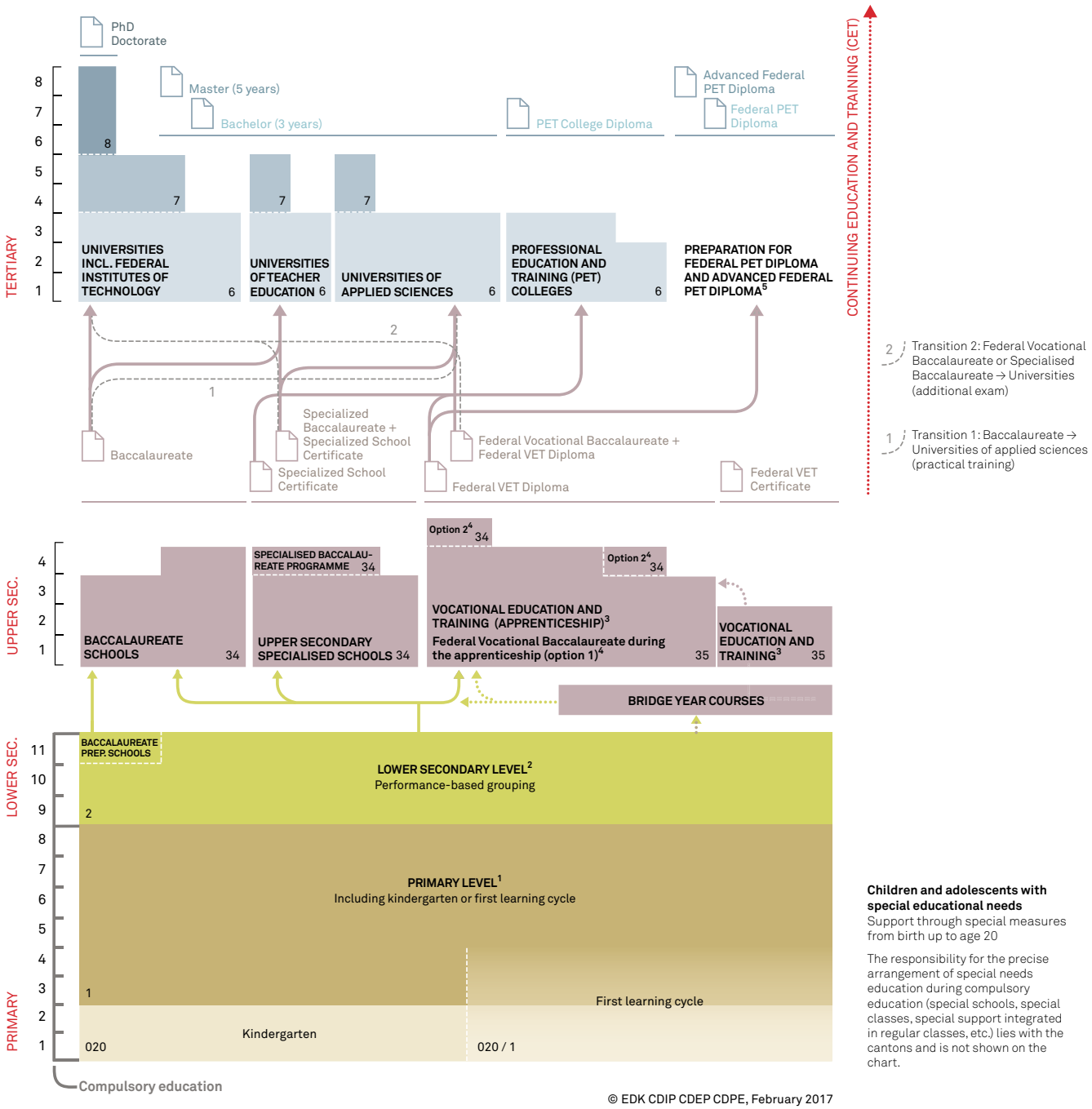
www.bildungssystem.bfs.admin.ch
Education statistics
Languages: German, French

12.1.1 Basic and Further Education

Education begins at the kindergarten level at age five or six. Primary school starts at age seven and runs through to grades four to six, followed by a lower secondary school the levels of which correspond to their personal ability. The name and curriculum of the educational levels varies from canton to canton. Once they have completed lower secondary school, students have finished their compulsory nine years' schooling. They can then either begin vocational training or attend high school to prepare them for university studies. Aside from apprenticeship and high school, students can continue their education beyond the statutory minimum by attending an intermediate diploma school to earn a specialized diploma.

The Swiss Education System

(FIG. 49)



Children and adolescents with special educational needs
Support through special measures from birth up to age 20

The responsibility for the precise arrangement of special needs education during compulsory education (special schools, special classes, special support integrated in regular classes, etc.) lies with the cantons and is not shown on the chart.

ISCED | International Standard Classification of Education 2011

- **ISCED 8**
- **ISCED 7**
- **ISCED 6**
- **ISCED 4**
- **ISCED 34 + 35**
- **ISCED 2**
- **ISCED 1**
- **ISCED 020**

[1] Two years of kindergarten or the first two years of a first learning cycle: included in compulsory education in the majority of cantons

[2] Lower secondary level: 4-year scuola media in the Canton of Ticino (pursuant to exception clause in Art. 6 HarmoS Agreement)

[3] Vocational education and training (apprenticeship): training company + VET school + intercompany courses; full-time school education possible

[4] Federal Vocational Baccalaureate: combined with an apprenticeship (option 1) or after an apprenticeship (option 2); duration option 2: full-time 1 year, part-time 1.5 – 2 years

[5] Federal PET examination / Federal PET diploma = ISCED 6
Advanced federal PET examination / Advanced federal PET diploma = ISCED 7

Quality of the Education System, 2017
1 = completely fails to meet the economy's needs,
10 = meets the economy's needs
(FIG. 50)

1	**Switzerland**	**8.94**
2	Finland	8.93
3	The Netherlands	8.59
4	Norway	8.43
5	Denmark	7.93
6	Singapore	7.88
7	Canada	7.81
8	Ireland	7.78
9	Germany	7.71
18	Hong Kong SAR	6.68
22	France	6.43
23	Luxembourg	6.35
25	USA	6.13
26	United Kingdom	6.04
30	Japan	5.91
32	Italy	5.74
34	China	5.55
37	India	5.25
43	Russia	4.66
62	Brazil	2.34

Sources: IMD World Competitiveness Center 2017

Public per Capita Spending on Education, 2015
in US dollars
(FIG. 51)

1	Luxembourg	4,820
2	**Switzerland**	**4,324**
3	Sweden	4,203
4	Norway	4,050
5	Iceland	3,832
6	Denmark	3,749
7	USA	3,435
12	Austria	2,770
14	United Kingdom	2,633
15	The Netherlands	2,408
17	France	2,374
18	Ireland	2,168
22	Germany	1,738
23	Singapore	1,568
24	Hong Kong SAR	1,397
27	Italy	1,189
28	Japan	1,130
42	Brazil	570
49	Russia	347
51	China	307
62	India	49

Sources: IMD World Competitiveness Center 2017

95% of students finish their mandatory education at a local state school. Only 5% attend private schools. Public schools enjoy a good reputation. In the 2012 OECD Program for International Student Assessments (PISA), Swiss students scored higher than the average in OECD states, with public schools achieving slightly higher scores than private ones. Within Europe, Switzerland is in second place overall behind the Principality of Liechtenstein. The IMD management institute has also confirmed that Switzerland has a high-quality education system that meets the economy's needs (Fig. 50).

Switzerland's public schools not only provide an education, they also fulfill an important integration function: children with different social, linguistic, and/or cultural backgrounds all attend the same schools. For Switzerland, a country with four national languages, multilingual skills are extremely important. In addition to their mother tongue, children are taught a second national language and English from primary school onward.

In 2014, public-sector spending on education in Switzerland was just under 36 billion Swiss francs. That's 5.6% of the gross domestic product. On a per-capita basis, this level of spending puts Switzerland in first place worldwide.

www.pisa.oecd.org
PISA study
Languages: German, English, French

www.bfs.admin.ch
Swiss Federal Statistical Office
Languages: German, English, French, Italian, Romansh

12.1.2 Vocational Training

Basic vocational training begins after the completion of compulsory education. Great importance is placed on practical on-the-job training. More than three quarters of all young people complete a work-and-training-based apprenticeship lasting three to four years and consisting of practical work in a company coupled with study of the accompanying theory at a vocational school for the relevant sector. In addition, students are eligible to obtain professional certification, which entitles them to enter a university of applied sciences where they can earn a Bachelor's or, in some cases, a Master's degree. Universities of applied sciences provide a tertiary level of education. 88% of Swiss students continue their education once they have completed compulsory schooling, placing Switzerland near the top of all OECD countries with regard to further education.

This dual system ensures that businesses have a choice of well-qualified and practically trained employees ready to enter the relevant sector. Youth unemployment is significantly below that of the average in the Euro countries. It is important to note that the practical aspect of vocational training in no way reduces the importance of in-depth teaching in school.

Professional education and training play an important role in Switzerland. Higher specialist and professional training courses are conducted with the approval of the federal authorities and professional associations. Successful completion of these courses leads to the attainment of a Swiss federal vocational certificate or diploma. In Switzerland there are nearly 150 federally recognized schools offering professional college degree programs, the majority of which are engineering colleges. These schools teach qualifications that are often learned only at universities in other countries. Vocational degrees are mutually recognized through bilateral agreements between Switzerland and the EU. The plethora of Switzerland's vocational training courses is made easier to understand and compare by the National Qualification Framework for Swiss Vocational and Professional Education and Training (NQF VPET) as well as explanations about certificates and diploma supplements.

www.s-ge.com/education
Facts and figures on professional training in Switzerland
Languages: German, English, French, Italian, Spanish, Portuguese, Russian, Chinese, Japanese

www.sbfi.admin.ch
State Secretariat for Education, Research and Innovation (SERI)
Languages: German, English, French, Italian

www.wbf.admin.ch > Topics > Education, research and innovation
Information issued by the Swiss Federal Department of Economic Affairs, Education and Research (EAER)
Languages: German, English, French, Italian

www.swissworld.org > Education
Education in Switzerland
Languages: German, English, French, Italian, Spanish, Russian, Chinese, Japanese

www.berufsberatung.ch
Advice on choosing a profession, higher education course and career
Languages: German, French, Italian

12.2 FURTHER EDUCATION

Continuing training plays an important role in Switzerland. Public institutions such as universities and universities of applied sciences offer not only postgraduate programs but also courses on various specialized topics which are open to everyone, not just graduates. Non-students can also register to sit in on regular courses. Adult education courses are publicly subsidized and open to everyone. There is also a wide variety of courses offered by private educational establishments, from language courses to yoga and managerial courses.

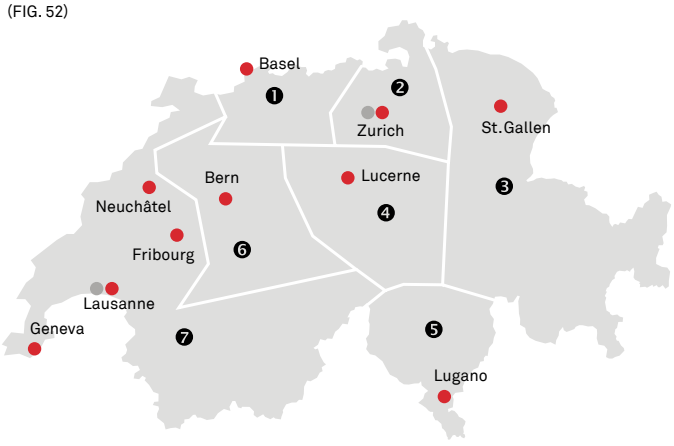
www.weiterbildung.ch
www.ausbildung-weiterbildung.ch
www.seminare.ch
Overview of continuing training (providers and courses)
Language: German

www.up-vhs.ch
Swiss Adult Education Association
Languages: German, French

12.3 UNIVERSITIES AND COLLEGES

12.3.1 Universities and Institutes of Technology

Universities and Institutes of Technology
(FIG. 52)



Specialized higher education region
1. University of Applied Sciences Northern Switzerland (Fachhochschule Nordwestschweiz)
2. University of Applied Sciences Zurich (Fachhochschule Zürich)
3. University of Applied Sciences Eastern Switzerland (Fachhochschule Ostschweiz)
4. University of Applied Sciences Central Switzerland (Fachhochschule Zentralschweiz)
5. University of Applied Sciences Southern Switzerland (Scuola Universitaria Professionale della Svizzera Italiana)
6. University of Applied Sciences Bern (Fachhochschule Bern)
7. University of Applied Sciences Western Switzerland (Haute école spécialisée de Suisse occidentale)

Sources: State Secretariat for Education, Research, and Innovation (SERI), 2017

Annual Tuition Fees
(Bachelor degree, in CHF)
(FIG. 53)

	EPF LAUSANNE	ETH ZURICH	UNIVERSITY OF BASEL	UNIVERSITY OF BERN	UNIVERSITY OF FRIBOURG	UNIVERSITY OF GENEVA	UNIVERSITY OF LAUSANNE	UNIVERSITY OF LUCERNE	UNIVERSITY OF NEUENBURG	UNIVERSITY OF ST. GALLEN	UNIVERSITY OF ZURICH	USI (LUGANO MENDRISIO)
Domestic students	1,266	1,288	1,700	1,568	1,310	1,000	1,160	1,620	1,030	2,452	1,538	4,000
Additional fees for international students					300			600	550	3,800	1,000	4,000
Total for international students	1,266	1,288	1,700	1,568	1,610	1,000	1,160	2,220	1,580	6,252	2,538	8,000

Sources: berufsberatung.ch 2017

In Switzerland there are ten cantonal universities at which the main language of instruction is either German (Basel, Bern, Zurich, Lucerne, St. Gallen), French (Geneva, Lausanne, Neuchatel), Italian (Lugano), or bilingual – German and French (Fribourg). There is a Swiss Federal Institute of Technology in Lausanne (French) and one in Zurich (German). In the 2015/2016 autumn semester, around 145,946 students were enrolled in these twelve universities, of whom 50% were female and 29.9% were foreign students. This is one of the highest percentages of international students worldwide. At 50%, the number of foreign professors is also comparatively high, and has been rising since 2002, underlining the international aspect of Swiss universities.

The range of subjects offered for study at Swiss universities is very wide. With the exception of medicine, there are no specific restrictions on admission. For a Bachelor's/Master's degree, foreign students must meet the language requirements and some universities require students to pass an admissions exam. Tuition fees for international students are also very reasonable. In addition to tuition, between CHF 18,000 and CHF 28,000 a year are required for living expenses, depending on the city and personal needs. As a result of the Bologna Accords, which aim to create a European higher education area, all Swiss universities have converted all courses of study to the Bachelor's/Master's system. Within the scope of this reform, courses of study are increasingly offered either partially or fully in English (esp. Master's courses). Switzerland participates in international student exchange programs such as ISEP, which enable foreign students to study at a Swiss university for a semester.

Swiss universities have earned high praise worldwide for their curricula and fields of research in certain areas of specialization in various degree subjects. The two Federal Institutes of Technology in Zurich (ETHZ) and Lausanne (EPFL) work together with the international research community to conduct cutting-edge research. They strive to attract world-renowned scientists. Swiss universities regularly rank among the top 100 universities worldwide and even higher in Europe, while some institutes are part of the world elite. Swiss colleges and universities are also involved in international research programs and offer postgraduate studies (e.g. in cooperation with foreign academic institutions).

www.sbfi.admin.ch
State Secretariat for Education, Research and Innovation (SERI)
Languages: German, English, French, Italian

www.universityrankings.ch
University ranking
Languages: German, English, French

www.swissuni.ch
Swiss association of university continuing education
Languages: German, French

www.swissuniversity.ch
Information for foreign students
Language: German, English, French, Italian

Executive MBAs: The Most Important Providers

(FIG. 54)

SUPPLIER	TEACHING LOCATIONS	HOMEPAGE
International Institute for Management Development (IMD)	Lausanne (Switzerland), Europe (Ireland, Romania), Shanghai (China), Silicon Valley (United States)	www.imd.org/emba English
Omnium Alliance (University of St. Gallen, University of Toronto, partner schools)	Brazil, China, India, Canada, Switzerland Hungary, Argentina, Turkey United Arab Emirates	www.omniumgemba.com www.gemba.unisg.ch English
University of St. Gallen	St. Gallen (Switzerland), China, USA, Brazil, Russia, India, South Africa	www.emba.unisg.ch German/English
University of Zurich	Zurich (Switzerland), Yale (US), Fudan (China)	www.emba.uzh.ch English
Rochester-Bern (University of Bern, University of Rochester)	Bern (Switzerland), Rochester (US), Silicon Valley (US), Shanghai (China)	www.rochester-bern.ch English
Zurich Institute of Business Education	Zurich (Switzerland), Shanghai (China)	www.ceibs.ch German/English
ZfU International Business School	Zurich (Switzerland)	www.zfu.ch/mba German
EMBA Lucerne	Lucerne (Switzerland)	www.hslu.ch/emba German

Sources: collated internally

12.3.2 Universities of Applied Sciences

Universities of applied sciences offer practical training at the Bachelor's and Master's level for professionals, most of whom have professional certification and have already gathered professional experience. In addition to normal teaching, these universities carry out research and development projects with private companies, particularly SMEs, and provide advanced training courses to local enterprises.

As a result, universities of applied sciences have partial responsibility for regional science and technology transfer and therefore continuously interact with industry. They have a large pool of teaching, research, and development and services skills that are strongly geared to clients, markets, and practice. In their role as research institutes, they are supported at the national level by the Commission for Technology and Innovation (CTI) and work together with the Swiss Federal Institutes of Technology and universities.

www.sbfi.admin.ch > Hochschulen > kantonale Hochschulen > Fachhochschulen und pädagogische Hochschulen
Overview of universities of applied sciences
Languages: German, French, Italian

www.kti.admin.ch
www.innosuisse.ch
Commission for Technology and Innovation
Languages: German, English, French, Italian

"In Switzerland, more than 100,000 children at 260 private schools are taught in German, French, Italian, or English (and in some cases in other languages)."

12.3.3 Executive MBA (EMBA) Programs

A special type of further education is the Executive MBA program, which is aimed at managers with many years' managerial experience under their belt. Generally, EMBA courses are work-study programs that are based on a modular system. Most of the degree programs also include time studying abroad in addition to the courses in Switzerland. IMD in Lausanne is a prime example of a top Swiss school whose EMBA program is regularly ranked as one of the best in the world. The program at the University of St. Gallen is also one of the best programs in the entire world.

www.find-mba.com > Europe > Switzerland
MBA/EMBA- Programs in Switzerland
Language: English

www.ausbildung-weiterbildung.ch
Swiss continuing training portal
Language: German

www.swissuniversity.ch
Programs at Swiss universities
Language: German, English, French, Italian

Cost of Private International Schools, 2014
in US dollars
(FIG. 55)

	ENGLISH SCHOOL		FRENCH SCHOOL		GERMAN SCHOOL	
City	Annual fees for primary school	Annual fees for secondary school	Annual fees for primary school	Annual fees for secondary school	Annual fees for primary school	Annual fees for secondary school
Amsterdam	19,448	20,680	6,936	10,914	9,551	9,551
Brussels	33,156	40,388	6,787	8,228	12,962	14,600
Budapest	19,568	20,518	6,136	7,261	5,117	5,117
Dublin	16,889*	20,238*	5,047	7,507	6,290	5,935
Frankfurt	20,589*	22,391*	4,844	5,908	NA	NA
Geneva	24,568	NA	16,807	18,985	13,233	13,233
London	22,884	24,194	7,481	9,129	10,069	10,069
Milan	17,492	19,935	5,645	7,000	7,573	7,573
New York	39,650	39,650	22,760	25,950	18,875	18,875
Paris	28,214	32,758	6,734	6,754	10,506	10,506
Singapore	23,613	28,551	14,995	16,810	12,975	14,971
Vienna	17,514*	22,235*	7,944	8,061	NA	NA

* No English school available. Information is based on the international school.

Sources: Mercer, Cost-of-Living Report, March 2014

12.4 INTERNATIONAL PRIVATE SCHOOLS AND BOARDING SCHOOLS

The Swiss education system also includes private schools. The more than 260 private schools teach courses in one of the three national languages – German, French and Italian – or in English (and some also offer other languages) to over 100,000 students. International schools are primarily important for employees of foreign companies who often remain in Switzerland for only a short time. During their stay, the children receive a suitable education in their native language or an international education and are prepared for the school-leaving certificates valid in their home country, such as the German Abitur, French baccalauréat, or US university admission certificate. Suitable establishments can be found in every region and all cities. The school fees are average compared to other countries.

Swiss boarding schools are known not only for their high level of education, but also for their strict discipline and international student body. Often they have very selective acceptance criteria and are known for their elite standing in the world.

www.swissprivateschoolregister.com
Register of private schools in Switzerland
Languages: German, English, French, Italian

www.swiss-schools.ch
Swiss Federation of Private Schools (SFPS)
Languages: German, English, French, Spanish, Italian

www.sgischools.com
Swiss Group of International Schools
Language: English

12.5 RESEARCH AND DEVELOPMENT

12.5.1 Conducting Research in Switzerland

The faster the pace of technological change, the greater the role that research and development play in a country's economy. Switzerland is one of the world's most research-intensive countries. In 2015 it spent more than 3% of its GDP on research and development. Since 1996, the real rate of change has been 4.1% as an annual average and thereby higher than the average annual economic growth during the same period (2.9%). All relevant indicators put Switzerland in the top ranks in international comparisons.

Of the CHF 21.7 billion spent on research and development in 2015, 72% (approx. CHF 15.6 billion) was financed by the private sector. The pharmaceutical industry (39%) and the engineering industry (12%) have the highest expenditure.

Relative to its population, Switzerland has the world's second-highest proportion of Nobel laureates (Fig. 57). Switzerland even tops international rankings in terms of patent applications (see fig. 56).

Patent Applications per 100,000 Inhabitants, 2015
(FIG. 56)

1	**Switzerland**	**554**
2	Luxembourg	493
3	South Korea	467
4	Japan	359
5	Sweden	248
6	Finland	240
7	The Netherlands	224
8	Taiwan	218
9	Denmark	215
10	Germany	215
12	USA	165
14	Ireland	115
18	France	109
19	United Kingdom	82
21	China	74
26	Italy	36
27	Hong Kong SAR	26
29	Russia	23
53	Brazil	3
57	India	2

Sources: IMD World Competitiveness Center 2017

Nobel Laureates per Million Inhabitants, 2016
(FIG. 57)

1	Norway	1.52
2	**Switzerland**	**1.44**
3	United Kingdom	1.03
4	Sweden	1.01
5	Israel	0.93
6	USA	0.88
7	Denmark	0.70
8	The Netherlands	0.53
9	Austria	0.46
10	Ireland	0.42
11	Germany	0.39
12	Belgium	0.35
15	France	0.31
16	Canada	0.22
18	Japan	0.14
19	Hong Kong SAR	0.14
22	Italy	0.08
23	Russia	0.07
27	China	0.00
28	India	0.00
29	Brazil	0.00

Sources: IMD World Competitiveness Center 2017

Publishing articles in scientific journals (whether printed or digital) is the most important way to distribute research findings and knowledge. The "impact factor" shows how often articles in one journal are cited in another. Across all scientific disciplines, Switzerland is in second place overall behind the US on this scale. The impact of Swiss publications has been increasing continuously since the 1980s and is now 17% higher than the global average. If the number of publications is compared to the size of the population, Switzerland is currently the world's most productive nation, with 3.9 publications per 1,000 inhabitants (Fig. 58).

Government funding is provided principally for basic research. The private sector and the scientific community work closely together. Each institute at university and college level has a coordination office for cooperation with the private sector. The Commission for Technology and Innovation (CTI) can make significant financial contributions to research and development projects in which companies cooperate with non-profit research organizations.

www.sbfi.admin.ch > Topics > Research and innovation
State Secretariat for Education, Research and Innovation (SBFI)
Languages: German, English, French, Italian

www.kti.admin.ch
Commission for Technology and Innovation
Languages: German, English, French, Italian

www.snf.ch
Swiss National Science Foundation (SNSF)
Languages: German, English, French, Italian

www.myscience.ch
Swiss Portal for Research and Innovation
Languages: German, English, French

12.5.2 International Collaborative Research

The Swiss private sector has a keen interest in research cooperation with partners abroad, particularly from the EU. Research and development cooperation with innovative foreign partners also gives smaller companies access to know-how from which they can benefit. Bilateral agreements with the EU create even more favorable conditions for this type of cooperation.

Further information on international collaborative research can be found in Section 4.2.4.

www.snf.ch > The SNSF > Research policies > International cooperation
International Collaborative Research
Languages: German, English, French, Italian

www.sbfi.admin.ch > Research & Innovation > International Cooperation in Research and Innovation
International cooperation in education, research and science
Languages: German, English, French, Italian

Scientific Publications, Average 2009–2013

(FIG. 58)

	NUMBER OF PUBLICATIONS PER 1000 INHABITANTS	SHARE OF WORLDWIDE PUBLICATIONS	NUMBER OF PUBLICATIONS PER RESEARCHER
Switzerland	**3.9**	**1.2%**	**0.86**
Finland	3.5	0.7%	0.46
Denmark	3.4	0.8%	0.49
The Netherlands	3.4	2.3%	0.94
Sweden	3.2	1.2%	0.60
United Kingdom	2.3	5.7%	0.56
France	2.2	5.7%	0.58
USA	2.2	27.1%	0.55
Austria	1.8	0.6%	0.41
Italy	1.7	4.0%	0.93
Germany	1.6	5.3%	0.39
Japan	1.0	5.0%	0.19
China	0.2	8.4%	0.16

Sources: State Secretariat for Education, Research, and Innovation (SERI), 2017

Research Establishments in Switzerland

(FIG. 59)

INSTITUTION		LOCATION	HOMEPAGE
CERN	European Organization for Nuclear Research	Geneva	mwww.cern.ch English, French
EAWAG	Aquatic research institute of the ETH	Dübendorf (ZH), Kastanienbaum (LU)	www.eawag.ch German, English, French
EMPA	Swiss Federal Laboratories for Materials Science + Technology	Thun (BE), Dübendorf (ZH), St. Gallen	www.empa.ch German, English, French
PSI	Paul Scherrer Institute	Villigen (AG)	www.psi.ch German, English, French
SLF	Swiss Federal Institute for Snow and Avalanche Research	Davos (GR)	www.slf.ch German, English, French, Italian
The Graduate Institute	The Graduate Institute of International and Development Studies	Geneva	www.graduateinstitute.ch English, French
WSL	Swiss Federal Institute for Forest, Snow and Landscape Research	Birmensdorf (ZH), Bellinzona (IT), Davos (GR), Lausanne (VD), Sion (VS)	www.wsl.ch German, English, French, Italian

Sources: Swiss National Science Foundation (SNSF)

12.6 SWITZERLAND INNOVATION – THE SWISS INNOVATION PARK

Switzerland Innovation, Switzerland's innovation park, offers technology companies space to cooperate with leading international universities, including the prestigious Swiss Federal Institutes of Technology (ETH Zurich and EPFL), and to use research results to develop marketable products and services. Switzerland Innovation thrives off of interdisciplinary cooperation between science and industry, which opens up new ways of marketing for a new era.

Switzerland Innovation's technology parks are the ideal location for research-oriented companies to develop their next groundbreaking or highly profitable product. Switzerland thus lives up to its reputation as the most innovative country in the world.

12.6.1 Innovation Focus Areas

Switzerland Innovation focuses on five innovation focus areas: health and life sciences, mobility and transportation, energy, the environment and natural resources, manufacturing and production, and computer and computational science. Each of these fields is a breeding ground for the development of a broad range of innovations that benefit society in areas such as robotics, artificial intelligence, space, nanotechnology, materials research, additive manufacturing, diagnostics, cancer treatments, or renewable energy.

12.6.2 Switzerland Innovation Parks

Switzerland Innovation Park Network West EPFL

Switzerland Innovation Park Network West EPFL brings together the prestigious Swiss Federal Institute of Technology EPFL and the specialized sites of western Switzerland. This productive scientific environment offers the perfect platform for disruptive innovation in all of the innovation focus areas. Scientific collaboration with internationally renowned professors and innovative spin-offs enables the research and development teams of large corporations and creative start-ups to shape the future with new innovations and product developments.

Switzerland Innovation Park Zurich

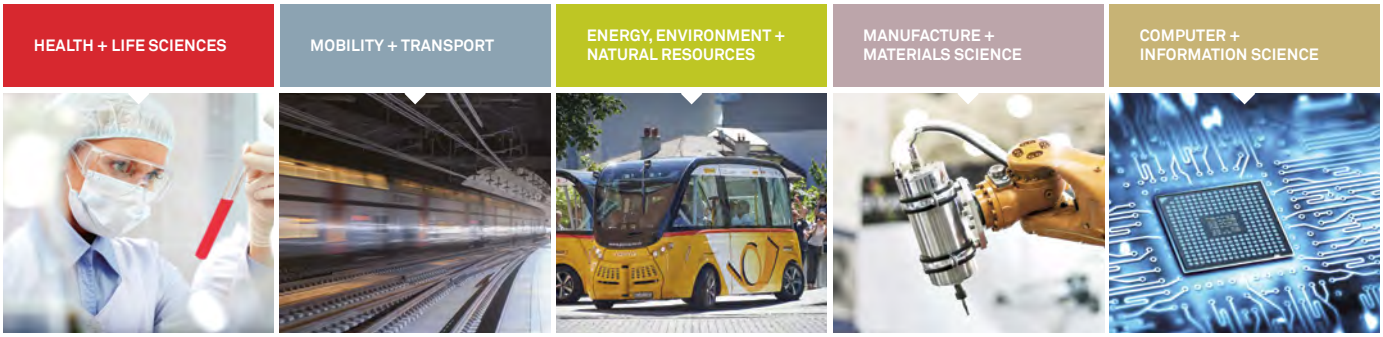
In close proximity to the top-ranking Swiss Federal Institute of Technology (ETH) Zurich and the University of Zurich, Switzerland Innovation Park Zurich is creating a new platform for research, development and innovation. The first projects in this park came from the areas of robotics and mobility, space travel, and financial and blockchain technology. For example, the ETH intends to establish a robotics and mobility hub to promote collaboration between academic research, companies, and start-ups.

Switzerland Innovation Park Basel Area

The Switzerland Innovation Park Basel Area offers a platform and infrastructure for innovative research and development groups that want to settle close to the world's leading companies in the sectors of health and life sciences. For example, the "Advanced Osteotomy Tools" spin-off of the University Hospital Basel and the University of Basel deals with robotic surgery and completely redefines bone surgery (osteotomy) through the use of lasers, robotics, and navigation systems.

Innovation Focus Areas and Specialist Areas

(FIG. 60)



Sources: Switzerland Innovation; own representation of S-GE

Switzerland Innovation Park Innovaare

Switzerland Innovation Park Innovaare is a unique innovation center near the Paul Scherrer Institute (PSI) that boasts large-scale, state-of-the-art research facilities. Based on PSI's special expertise, innovations in the area of accelerator technology, new materials and processes, people and health, and energy are brought to market maturity.

Switzerland Innovation Park Biel/Bienne

Switzerland Innovation Park Biel / Bienne has four competence centers – modern production techniques, battery technology, medical technology and smart factory – as well as five priority areas for research and development: health and life sciences; energy, environment and natural resources; manufacturing and materials; computer and information technology; and mobility and transport. Its laboratories and research services are available for SMEs and start-ups and it supports them in development and implementing marketable products.

12.6.3 Target Audience

The strategic position of Switzerland Innovation at the forefront of global research attracts many highly innovative businesses. Nowhere else offers such a wide range of new technologies and the combined expertise of some of the world's leading experts making breakthrough innovations a reality. Research teams and innovation cells work together in an environment that inspires innovation and is focused on successfully launching new products on the global market. Target groups include:

- Medium-sized and large technology companies that develop new marketable products, services, and processes.
- Established companies from high-tech industries with a high value-added ratio and a clear focus on research and development and innovation activities.
- Research groups, the research and development teams of corporations, and start-ups.

12.6.4 Services

A wide range of services and excellent research infrastructure have been specifically designed to ensure the full potential and operational effectiveness of R+D staff and innovation cells at Switzerland Innovation. This includes, among others:

- Support for cooperation with world-class academic partners and easy access to the best talent and researchers.
- A network of thriving high-tech start-ups and spin-offs.
- A platform for the exchange of ideas and for partnering with the research and development teams of international companies.
- Industrial liaison officers who help R & D personnel to expand their options.
- Approximately 200,000 square meters of high-quality laboratories, offices, conference rooms and co-working spaces; large research institutions with accelerator facilities.
- A business-friendly and politically stable environment; access to research funding from Switzerland and the EU; very high quality of life that is attractive to top talents and their families.

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Languages: German, English, French