

## Overview of Education system in Switzerland for engineering education

An Engineering degree can be achieved in Switzerland either by a study at one of the two Federal Institutes of Technology (ETH, EPFL) or at one of the seven Universities of Applied Studies.

ETH Zürich, in the German speaking part of Switzerland, offers Bachelor, Master and PhD Studies, as well as CPD programmes in a wide field of Engineering activities.  
<http://www.zfw.ethz.ch>

EPFL Lausanne, in the French speaking part of Switzerland, offers also Bachelor, Master and PHD Studies, as well as CPD programmes in a wide field of Engineering activities.  
<http://formation-continue-unil-epfl.ch>

The seven Universities of Applied Sciences (UAS) allow Bachelor and Master Studies in several Engineering fields. They also offer CPD programmes. An overview of UAS study programmes is given on

<http://www.sbf.admin.ch/fachhochschulen>

or

<http://www.sbf.admin.ch/themen/01337/01339/01340>

UAS Studies in Engineering are listed in an annex of the SERI decree SR 414.72  
[http://admin.ch/ch/d/sr/414\\_712/app1.html#ahref0](http://admin.ch/ch/d/sr/414_712/app1.html#ahref0)

Studies at the Federal Institutes of Technology (FIT) are normally full time studies. At the UAS also part time studies are possible.

The Swiss Federal Statistical Office publishes periodically information on interesting aspects of Higher Education Institutes. See

<http://www.bfs.admin.ch/bfs/portal/de/index/themen/15/06/tab/blank/uebersicht.html>

All FIT and UAS have international contacts and cooperations. International cooperations are demanded by the particular law in force for an university and supported by a federal decree on promotion of education, research and innovation.

In 1952 the first Swiss Register of Engineers, Architects and Technicians named RIAT was set up. There are 3 level of registration:

REG A: Engineers and Architects with accepted Master degrees or equivalent qualification and 3 years of confirmed professional experience.

REG B: Engineers and Architects with accepted Bachelor degrees or equivalent qualification and 3 years of professional experience.

REG C: Professionals with accepted degrees of professional colleges (upper secondary level Federal Diploma) or equivalent qualification and 3 years of professional experience.

For more information on acceptance of degrees and qualifications see <http://reg.ch>

## Accreditation processes for higher level education (EQF level 5+)

The FIT's are obliged by law to proof their performance and quality if they ask for Federal Financement (Universitätsförderungsgesetz Art. 11 Abs. 3 UFG). The evidence can be checked by the National Accreditation Agency OAQ with a quality audit every 4 year. The quality audit is not mandatory for the ETH, it participates voluntary. EPFL has accredited some programmes by OAQ in cooperation with the French institute CTI.

The accreditation for UAS programmes is regulated in the federal act (SR 414.71, Art. 17a). The accreditation for UAS is mandatory. The Federal Department of Economic Affairs, Education and Research EAER has recognized 6 agencies to carry out an accreditation on behalf of the EAER. The accreditation period is 7 years.

All courses of UAS are accredited by the federal government. The universities can appoint an agency recognized by the EAER with the examination of applications. The Agency will check if the defined quality standards are met. After assessment, the Agency present their accreditation recommendation to SERI. The accreditation process involves three steps: Written self-assessment of the university, the external evaluation by the expert group and the accreditation recommendation of the agency. The assessment is carried out by independent external appraisers. It is based on the self-assessment of the university and will be held on site. On that basis, a report is written, the agency submits its accreditation with recommendation for SERI. SERI then prepares the accreditation for the EAER.

A new law (Hochschulförderungs- und -koordinationsgesetz, HFKG) scheduled for 2015 will harmonize the rules for all HEI. Institutional accreditation will become mandatory, the accreditation of programmes will be voluntary.

At the time, the accreditation by EAER proofs generic standards as 'education objectives', 'relevance to practice' etc. No programme details are checked. For more information on EAER standards see <http://www.sbf.admin.ch/themen/01337/01339/01342/index.html>

For UAS also ASIIN is recognized as accreditation agency which would carry out an accreditation on EUR-ACE standard. Until now no accreditation by ASIIN has been carried out in Switzerland. The national Agency OAQ has a pending application at ENAEE for the EUR-ACE –label.

The accreditation teams nominated by EAER consist of experts due to ENQA standards. They are recognized as specialist in their professional fields and have to sign a confirmation of independency.

## Accreditation processes for science and engineering programmes

There are no special requirements from EAER for engineering programmes. Such requirements are checked by the specialized accreditation agencies on their own standards.

## Quality assurance process for all programmes

Quality assurance is in the responsibility of each university. The majority of UAS perform the quality assurance due to the EFQM model.

## Quality assurance process for programmes for science and engineering programmes

There is no special quality assurance system for engineering in use. The universities are responsible for a high quality in engineering education and they are themselves interested in a high reputation of their programmes, both for interested students and the industry.

## Regulation of the engineering profession in Switzerland

Switzerland has no regulation of the engineering profession. There have been some protected titles as 'Dipl.....Ing.' which have lost the importance with the implementation of the Bologna System. Nevertheless there are some regulations for the designation of a title.

All titles from the ETH or EPFL are protected (e.g. Master of Science ETH in Civil Engineering). Violation will be punished. Also Bachelor and Master degrees of UAS are protected (e.g. Bachelor of Science ZFH in Civil Engineering). The title incorporates the name of the UAS (e.g. ZFH = Zürcher Fachhochschule).

The new HFKG may have rules for the recognition of other degrees.

The admittance to the Swiss REG needs a confirmed professional experience of at least 3 years in the relevant field of the profession. But there is no evidence for CPD. Its up to the responsibility of each person to keep his knowledge on the required level.

## Submission of programmes for evaluation in FEANI Index

A number of programmes have been submitted in the past for assessment by EMC. It is intended to work out a list of programmes by Swiss FEANI NC that shows the status of Engineering Programmes in Switzerland. After comparison with the actual FEANI INDEX-List the application for acceptance of missing programmes in the INDEX will be submitted. The handling of all old programmes is pending.

## Glossar

ASIIN	German registered association for the accreditation of degree programmes in engineering and informatics
CPD	Continuing Professional Development
CTI	Commission des Titres d'Ingénieur
EAER	Swiss Federal Department of Economic Affairs, Education and Research
EFQM	European Foundation for Quality Management
ENQA	European Association for Quality Assurance in Higher Education
EPFL	Ecole Polytechnique Fédérale de Lausanne
EQF	European Qualifications Framework
ETH	Eidgenössische Technische Hochschule
EUR-ACE	European Accredited Engineer
FH	Fachhochschule (= UAS)
FIT	Federal Institutes of Technology
HFKG	Schweizerisches Hochschulförderungs- und -koordinationsgesetz
OAQ	Organ für Akkreditierung und Qualitätssicherung der Schweizerischen

	Hochschulen
REG	Stiftung der Schweizerischen Register der Fachleute in den Bereichen des Ingenieurwesens, der Architektur und der Umwelt
RIAT	Schweizerisches Register für Ingenieure, Architekten und Techniker (today REG)
SERI	State Secretariat for Education, Research and Innovation (Switzerland)
UAS	University of Applied Sciences
UFG	Universitätsförderungsgesetz (Switzerland)
ZFH	Zürcher Fachhochschule

