

Reflections & Evaluation of Courses at ETH Zürich

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In general:

The Eidgenössische Technische Hochschule Zürich (ETHz) is rated among the top universities in the world, and this is something you notice! With an annual budget of CHF 1.51 billion (EUR 1.4 billion) they have all the means to deliver challenging courses of high quality. The department of computer science offers a large variety of exotic courses, each taught by a team of highly qualified professors and teaching assistants.

The courses at ETHz are demanding but rewarding. Personally, I have the feeling there is much higher emphasis on applying knowledge to practical skills. This is accomplished through practice sessions and many tasks during the semester.

Following is a short discussion of the courses I took on my exchange.

Course: Network Security

Lecturers: Prof. Bernhard Plattner, Dr. Thomas Dübendorfer, Dr. Stefan Frei, Prof. Adrian Perrig
ECTS 6

An absolute must for anybody interested in the field of IT Security. This course covers so many interesting topics that students are required by Swiss law to sign a non-disclosure agreement.

Exam: 90 minutes. Lots of questions that require short answers. Some are multiple choice.

Course: Security Engineering

Lecturers: Prof. David Basin

ECTS 5

Not all courses are equally fun. The following is a warning for anybody thinking of taking this course. While this course covers interesting topics (and, don't get me wrong some topics are very interesting) the organization and exam are far from ok. Throughout the semester the course asks you to complete many non-graded tasks. The lecture is very theoretical and gives you many, many slides to learn. While all this seems ok the problem is the exam.

Exam: First time that the exam was written – all previous years it was oral. The exam covers almost nothing from the lectures and only very little from the tasks. At the end of this 90 minute and fourteen page long exam you ask yourself the question: "Why did I study?"

Course: Security of Wireless Networks**Lecturers: Prof. Srdjan Capkun, Dr. Claudio Soriente****ECTS 5**

Well taught course that gives a nice overview of the difficulties of securing wireless networks. Covers topics ranging from the securing traditional Wi-Fi systems, to securing wireless sensor networks. The practice sessions cover some topics from the lectures and give you some hands on experience. For example they let you play with software defined radios to jam Wi-Fi connections.

Exam: Oral. Fair exam.**Course: Smart Energy****Lecturers: Prof. Dr. Friedemann Mattern, Verena Tiefenbeck****ECTS 3**

A somewhat more relaxed course that covers how IT can help make the world greener. The topics covered are interesting and give a nice overview of current trends and challenges in Smart grid technologies.

Exam: Oral. Fair exam.**Course: System Security****Lecturers: Prof. Srdjan Capkun, Prof. Adrian Perrig****ECTS 5**

Security course that covers the security challenges of modern operating systems. Throughout the semester the course gives many interesting practical tasks that cover topics such as identifying and exploiting buffer overflows, reverse engineering and using the Metasploit framework.

Exam: 90 minutes, written exam. Roughly one point/question per minute. Also graded tasks throughout the semester.**Course: Wireless and Mobile Computing for Entertainment Applications****Lecturers: Dr. Stefan Mangold****ECTS 4**

This course is lectured by Stefan Mangold, a senior research scientist at Disney Research, Zürich, where he leads the group working on wireless communication and mobile computing. The course discusses ways of how we can use different wireless communication techniques for creating entertainment applications. For example, the use of visual light communication in toy cars. You also get the possibility to visit Disney Research, Zürich.

Exam: No exam. Many graded tasks throughout the semester.