

**Exchange university**

ETH ZURICH

Degree programme

ENGINEERING PHYSICS (MASTERS)

Pushing Boundaries: My Exchange Experience at ETH Zurich

Before departure:

I mainly applied for exchange studies to explore the academic world further. My first choice was the University of Tokyo, as I knew a professor there and wanted to work in his research group. However, fate had other plans, and I was placed at my second choice, ETH Zurich. Initially, I was a bit disappointed, as I had prepared extensively for UTokyo, but at the same time, I was excited – ETH is a world-renowned university, and I also had close friends in Zurich whom I was eager to meet.

Since most courses at ETH are taught in English, I didn't need to take a language course before my exchange. However, as a non-EU student, the visa process was quite complicated. I applied for the exchange at the end of the first year of my master's program, and as a non-EU student in Sweden, I was required to have a Swedish residence permit, which needs to be renewed annually. Unfortunately, my first-year residence permit was set to expire just one week before my departure, meaning I couldn't leave Sweden with an expired visa, and my renewal application was still pending.

Thankfully, the ETH exchange office was very helpful at the last moment. They advised me to contact the Zurich immigration office, and with some paperwork, I was able to obtain a three-month Swiss visa just in time for my departure. Once in Zurich, I extended it to six months, allowing me to stay for the full duration of my exchange.

Upon arrival:

I arrived in Zurich one week before the semester started. There was an introduction session for exchange students, which was very helpful. It provided valuable insights into Swiss culture, bureaucracy, and life at ETH, making it easier to settle in.

ETH also has several student unions and clubs, which are great for making friends and exploring life beyond academics. These groups offer a variety of activities, helping students connect and experience different aspects of university life.



Pictures of the ETH Zurich campus

Financials:

I received a scholarship of 2000 CHF from SEMP, which was immensely helpful during my exchange. I opened a bank account in UBS to deposit the scholarship. The process of opening a bank account was quite easy. Compared to Stockholm, I found Zurich to be a more capitalistic city. Grocery prices were significantly higher, but the quality of the products was also excellent. Having worked as a summer research assistant at KTH before my exchange was crucial in managing my finances effectively.

Public transport in Zurich costs about 63 CHF per month, which is comparable to Stockholm. However, Zurich's public transport system is divided into zones, and travelling across multiple zones requires additional tickets. This is something to keep in mind if you plan to explore areas outside your main zone frequently.

For groceries, I typically shopped at Lidl, which offered a good balance of quality and affordability for basic essentials. For meals, ETH mensas were a lifesaver. The cheapest lunch costs around 7.5 CHF, and the meals are both delicious and well-balanced in terms of nutrition. I didn't party much like some students in my accommodation, which saved some money.

Accommodation:

The housing market in Zurich is challenging, especially for students. Fortunately, I was offered accommodation through ETH in a WOKO student housing facility. I lived at Meierwiesenstrasse 62, which is primarily for exchange students.

This accommodation is well-connected to public transport, with about a 30-minute commute to both ETH Zentrum and ETH Hönggerberg campuses. While the location and connectivity were convenient, the living conditions had some drawbacks.

The kitchen was shared among approximately 150 students, making it quite crowded during peak times. Some basic utensils, like cutlery, plates, and mugs, were already provided, but I would recommend getting your own utensils, like pans. We were given a fridge space, which was quite small, and note there was no freezer, so meal preparation can be challenging. Cooking around 6 PM worked best for me, as it was less busy. However, the shared kitchen often became messy and, on weekends, a complete disaster. If you value cooking in a clean space or prefer privacy, this arrangement might be frustrating.

Despite these issues, I wouldn't complain too much since finding an apartment in Zurich is extremely difficult, and WOKO provided a relatively affordable and practical solution.



Clockwise - Picture of my room, kitchen and view from my room during a snowy day

University and studies:

ETH is one of the world's top universities, offering courses across nearly every field imaginable. Unlike at KTH, where courses typically last for two months, ETH follows a semester-based system, with courses running for the full four months.

Most master's courses are taught in English. Personally, I found the academics at ETH to be more challenging than at KTH. However, I appreciated the opportunity to explore courses and research groups that aren't available anywhere in Sweden. Studying under some of the best professors was an incredible experience, and I truly enjoyed the academic rigour.

Exams at ETH can be either written or oral. As an exchange student, you also have the option to take exams earlier than scheduled, as the ETH exam period often overlaps with the KTH semester.

The University of Zurich offers German courses, and the fees can be reimbursed by KTH as a language course. Registration is quite tricky since slots are limited. I enrolled in the A2 German course but later dropped it. Because I was getting a lot of homework in the language course, and I wanted to focus on my main academics.

Courses:

I primarily took courses in the physics department, with a focus on photonics and quantum mechanics. One of the highlights of my exchange was a 10-credit project in the Photonics Laboratory, where I worked on optical tweezers. It was an incredible experience with a steep learning curve, allowing me to develop theoretical and experimental skills.

Here are the courses I took:

227-0653-00L Quantum Measurements and Optomechanics

This course focused on the interaction of light with quantum systems. I learned a lot about predicting the evolution of quantum systems, which was fascinating. The small class size—just five students—made the learning experience highly interactive, and the professor was excellent.

402-0469-67L Classical and Quantum Parametric Phenomena

This course covered the modelling of various oscillators, starting from simple classical oscillators and progressing to quantum oscillators. It provided a solid theoretical foundation in parametric phenomena.

402-0468-15L Nanomaterials for Photonics

This course gave a broad overview of photonics, covering topics such as lasers, plasmons, detectors, microscopes, and photonic devices, to name a few. It was a great way to gain insight into the different applications of photonics in modern technology.

227-0157-00L Semiconductor Devices: Physical Bases and Simulation

This course focused on the physics of semiconductor devices and included lab exercises on simulating these devices. The combination of theory and practical simulation work made it particularly engaging.

In terms of credit transfer to KTH, I plan to transfer these courses as equivalent elective courses in my master's program. The diverse range of topics allowed me to expand my knowledge beyond what is offered at KTH, making this exchange academically enriching.

City and country:

As an international student, I didn't notice significant differences between Swedish and Swiss cultures. Climate-wise, Zurich is quite similar to Stockholm, though it's slightly warmer and windier sometimes.

Zurich is Switzerland's financial hub, home to many financial institutions and fintech companies. This gives the city a polished, upscale feel—you'll often see people in fancy cars and business attire. However, when it comes to nature, Zurich and Stockholm are quite comparable, both offering beautiful landscapes and easy access to green spaces.



Some Swiss sceneries

Leisure and social activities:

I didn't participate in sports during my time in Zurich, as I focused on my courses and projects. However, I did go on a hike once in the Alps. It was a very unique experience, as hiking in Stockholm is very different from hiking in the Swiss mountains. The terrain was more challenging than I expected!

There are several hiking groups for students, and you can also get a Friends Pass from SBB, which allows a group of 3-4 people to share a train ticket, making travel more affordable. The student association also organizes various activities, providing excellent opportunities to meet new people.

Fortunately, I had some friends in Zurich from my bachelor's studies, and it was wonderful to reconnect with them while also making new connections.



A view from the peak - when I went for a hike

Sustainability:

Initially, I had planned to take a train from Stockholm to Zurich, as it would have been the most sustainable option. However, after considering the cost and time required, I decided to split my journey between sustainable and less sustainable modes of transport.

I first flew from Stockholm to Budapest, where I spent 12 hours exploring the city, as I wanted to experience Eastern Europe as well. From Budapest, I continued my journey by train to Zurich, which

took approximately 10 hours. This allowed me to experience rail travel while also reducing my carbon footprint compared to flying the entire way. The train ticket was reimbursed by ETH.



Budapest City park and Jewish quarters

Other recommendations and observations:

The exchange was a life-changing experience that allowed me to grow both personally and academically. While I didn't fully enjoy the student life in Zurich—mainly due to my accommodation—the academic experience was outstanding.

One of the things I truly appreciate is that I was able to connect with a professor for my master's thesis at TU Delft. As I write this report, I am currently working on my thesis with his research group, and it has been an incredible experience—exactly what I was hoping for. Reconnecting with friends in Zurich was also invaluable, as having a strong social circle made life in the city much easier.

For future students, I highly recommend exploring as much as possible. If you're interested in pursuing a career in academia, consider taking a project course and building connections with professors and postdocs. The people at ETH are among the brightest in their fields, and it's an amazing opportunity to learn from them.