

# ETH ZURICH EXCHANGE REPORT



This document is meant to be a simple guide, or eye opener, for your stay at ETH Zurich. If you are already accepted; congratulations! If not, good luck!

## BEFORE ARRIVING

### HOUSING

As very obvious for everyone; you need a place to live in Zurich. The best way is to get in contact with other students that might move out. Just ask your coordinator for the email addresses or similar. Else, here are a couple of places to look

### WHERE TO LIVE

Zurich is divided in Kreises, and here are some recommendations of places to stay

- Kreis 1 . This is the downtown, which is great, but might become a bit hard to find a affordable housing
- Kreis 4 and 5 is a bit industrialized, but the most up and coming and trendy area of the city. Plenty of clubs and trendy cafes.
- Kreis 7. This is where I stayed, which is a very wealthy and comfortable place to live. Close access to the forest to take a run but still quite central. Have some student houses here and there despite the high housing prices

- Kreis 8 and the most central of Kreis 2 are bit same fashion as Kreis 7, but a bit closer to the city center
- Kreis 10 and 6 are also very nice, but here you also have some areas which are not that convenient as the two bullet points above

Here are some links which might help you in the search for a place to stay in Zurich

<http://www.woko.ch/de/default.asp>

[http://www.wohnen.ethz.ch/index\\_EN](http://www.wohnen.ethz.ch/index_EN)

<http://www.wgzimmer.ch>

<http://www.students.ch>

## LANGUAGE COURSE

Both for learning the German language, but most of all for getting a huge amount of friends the first weeks, you should definitely attend the language course offered by ETH / University of Zurich. It is a very interactive course; it basically feels like you are back to primary school. They also do excursions, city rallies and so on, and you have plenty of time to get to know the city before the more hectic student life starts for real. It last for two weeks, ending just before the semester starts.

As a Norwegian, I got a big scholarship to do language courses for four weeks. Since I found nothing suitable in Switzerland, I first went to Hamburg for two weeks, for then taking the two week course in Zurich afterwards. This was an amazing experience. I stayed mostly in AirBnB apartments, and the hosts (more or less my same age) took me out on cafes and parties, which was a rather different experience than what you get in the more proper Zurich. Also this class was had the form of the one in Zurich, and met also there a lot of interesting people, coming to Germany to work or study. Very short list of interesting places in Hamburg

- Reeperbahn
- Visit the cafes in Schanze
- Take a run in Stadtpark
- Party with the house occupants in Gängeviertel

Here I leave the link to my course in Hamburg:

<http://www.colon.de/en/german/german/intensive-courses/intensive-course-5x5.html>

## ADMINISTRATIVE

Switzerland, in particular Zurich, is an extremely well organized place. You need to deal with your local “Kreis office” to get a residence permit, but you get all the information from ETH when you register and pick up your file from them in the start of the semester.

Also, get yourself a Swiss bank account (how cool is that??!). UBS has a free student account, but also the Kantonalbank and PostFinance has some good offers. For getting a Swiss phone subscription, for example Sunrise has a good offer for students.

If you are a Norwegian student, sign up at ANSA for cheap insurance (and some great parties!!)

Switzerland has a brilliant public transport system. You get around everywhere with the bus and trams in Zurich, and out of the city you take the trains. A clever thing to do is the by the Halbtax or Gleis 7. These are year passes which saves you half or full price when travelling, more on that at [sbb.ch](http://sbb.ch). This you should buy as soon as possible, you will save a lot of Francs on this deal. You reach over the whole country in a couple of hours with the train/bus system, so you have easy access to go skiing and hiking whenever you want. More on that below!

## STUDYING AT ETH

First of all, as you probably know, ETH Zurich is ranked as the 7th best school for technical studies, and in the frontier in research in all sorts of fields. That means you meet a lot of very dedicated and ambitious students and professors. The working culture is in general extreme in Switzerland, and particularly in Zurich. Be prepared to work hard. But do not let that scare you, you might find out that you keep up the level quite good after all. With so many great people, it infects you as well.

What I experienced from ETH is that the professors are very ambitious about their work, and it is important to find those who give inspiring lectures as well. Therefore you should start out the semester with about twice as many credits as what you intend to finish with, to get the feeling for both the level, and if you have a good lecturer. If your program allows it, also try courses from other departments, which can open your eyes to entirely different fields than the one you mainly are studying.



*Polyterasse, view from Main Building*

All courses are found here; [www.courses.ethz.ch/](http://www.courses.ethz.ch/). The exams are held either in the end of the semester, or as “session” exams, meaning right before the next semester. If you have a good reason as an exchange student, it’s possible to prepone orals and also to have the written exams in your home institution after you are back. This you hear more of from the examination office. Now, here are my courses and what I think of them

**AUTUMN SEMESTER**

Introduction to Computational Physics	Physics Department	Score 5/5
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This course is held by Prof. Herrmann, who is an eccentric and charming character. He goes through the lectures with a baffling intensity, which makes you open your eyes and ears. The course itself is devoted to stochastic processes and numerically solving differential equations. All the time with a physical relevance, from magnetism to fluid mechanics. A very good script is provided on the homepages. There are C++ exercises which are not mandatory, but if you like programming you have something to dig into. Guest lectures held by Professors having relevant courses next semester, good way to see if you like person or not. Prepare well for the oral exam!

Quantum Information Theory	Physics Department	Score 3/5
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This course was held by Dr. Renes. Himself a kind and easy going person, who lecture in a good way. The course is very theoretical, and mainly focused on quantum computing and cryptography. It is provided with a good script and exercises. The reason I put this in a medium score is most of all I had big holes in my mathematics background you probably should have for this course. A big help would be a good understanding of probability theory and function analysis, which was not a part of my education in advance.

Corporate Development and IT	MTEC Department	Score 5/5
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Here we have superman himself to give you an introduction to how you change big corporates. Prof. Gutzwiller is self-made millionaire who sold his consultancy firm and now giving lectures for fun. He has so many good quotes it’s impossible to write them all down. When he leaves the lecture he is for example off to New York to save some troubled bank at Wall Street. Multiple choice exam where you can bring your “cheat sheet”

Technology Entrepreneurship	MTEC Department	Score 4/5
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This is maybe more a motivational course for you who might want to start your own business. It is held by the Swede Ulf Claesson, but packed with Ulf’s friends as guest lectures, from small and big firms around the world, a professor from Berkeley and some who have just done it all. The course give you the taste all aspects of doing a startup, which is wrapped up in a written exam in the end of the semester

Strategy Management	MTEC Department	Score 5++/5
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This is THE course you have to take during the fall. If you ever have thought about going into strategic consultancy, this is a key course. You also learn a lot which are applicable for start-ups, or just working on the strategy of whatever firm. The course is held by the most inspiring and humble professor I ever had, the two meter tall Prof. Georg von Krogh, running up and down the auditorium stairs in ecstasy with his charming Norwegian accent. Half of the grade is based on presenting a case study in groups, and guest lectures as the CEO of Zurich Insurance and CEO of PwC Switzerland.

System Dynamics and Complexity	MTEC Department	Score 5/5
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This course is held by the physicist and MTEC professor Frank Sweitzer. This course puts macro economy in a very structured framework and often aims to describe the economy with differential equations. You get insight in Nobel prize winning models for these complex systems, and also interesting phenomena like chaos is a key concept. There are voluntary numerical exercises where you play around with parameters to find different behavior in macroeconomic systems, depending how you tune tax rate, production rate and so on.

#### SPRING SEMESTER

Computational Statistical Physics	Physics Department	Score 5/5
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This is also held by Prof. Herrmann, with a similar fashion as the previous course. A good understanding of statistical physics and classical mechanics will help you a lot. Here you continue on, at least for me, on the most interesting topics you learned about last course, and learn some very interesting tricks for handling huge systems. All from molecular dynamics, to modelling galaxies. Cluster algorithms, clever sorting techniques and all in all; you learn a lot of concepts also highly appreciated in for instance hedge funds.

Computational Quantum Physics	Physics Department	Score 5/5
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Here you meet Professor Matthias Troyer, a kind and charismatic Austrian. Besides from being a pioneer researcher at ETH, he is a research consultant for Microsoft and also setting up quantum computing devices with Google. The course itself is very demanding, but the same time the most inspiring physics course I have taken. The essence is solving the Schrödinger equation numerically, especially for many body problems. Here you get introduced to quantum computers and actually programming those algorithms, dealing with Path Integral Monte Carlo, and generally combining those very abstract concepts with high performance algorithms.

Agent Based Modelling of Social Systems	MTEC Department	Score 4/5
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This is a course also held by Professor Sweitzer. In contrast to the previous course, you now take a bottom up approach to systems. This is threatening a lot of interesting phenomena in nature and in economic systems, all from swarming behavior in flies to systemic risk in bank networks. Part of the grade is a self-chosen project, collaborating in pairs, with presentation and handing in a report. Programming is done in Python, or you can use other languages like C++ if you wish.

Entrepreneurial Risks	MTEC Department	Score 4/5
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Here you will meet the one and only Prof. Didier Sornette. Best way to introduce him is to watch his 1 million views Ted Talk, where he basically goes through the content of this course. He holds professorships in Physics, Geophysics, Economy AND finance. One of the more progressive Professors at ETH after my opinion. You get bombarded with thousands of different interesting topics from all fields of science, and it is more to motivate you doing risk modelling than learning for an exam. Because it's no exam. You work will be building up wiki-pages of self/co-produced projects, buying stocks in the projects and in that way also learn how a stock exchange works, hands on experience.

Quantitative Risk Management	Math Department	Score 5/5
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Professor Paul Embrechts is a living legend; he is basically the founder of this field. A usual phrase you will hear could be something like "I tried to explain to the board of Goldman Sachs that this method is crap, but poor people, they wouldn't listen". It is really a statistics course which is devoted to finance. You learn a lot of techniques which are used in the industry, and can also be applied in all sorts of risk management. Its provided excellent slides, accompanied by a the lovely Oxford English accent of Prof. Embrechts, former professor at LSE, Imperial College and Oxford University, so guess that is the reason.

## LIFE IN ZURICH

So, enough of the school talk. Even though a lot of time is spent studying, you have a lot of opportunities to make your stay a good one. First some bullet point hints on campus

- Get a bike, Zurich is very convenient to for biking
- Try the University Mensa, cheaper (and sometimes better) food, and two stories sitting places out in the sun. Also have a brunch buffet on Saturdays, with included Prosecco and eat as much as you want
- Take a beer in BQM at Polyterasse after a long day in the library

## SPORTS

ASVZ ([www.asvz.ch](http://www.asvz.ch)) is the sport organization for the students in Zurich. It is included in your semester fee, and gives you a huge variety of gyms and sport classes. Just check out the web pages and you find something interesting. A hidden gem is the Fluntern site, where you have miles of good marked running tracks, Beach Volley, outdoor strength training, to mention some, in the beautiful Zuricher Berg



Else, if you are a Nordic student, you should consider joining Nordiska Roddforeningen, remember to contact them early to join the introductory course. Besides having amazing roing trainings at the lake, there are also a lot of parties where you get to know other persons than just students

## BARS AND CAFEES

Zurich has a lot of nice places to take a beer or a coffee, from extreme luxury to hipster student places. My favorites around town are mentioned below

- La Stanza (for reading Financial Times with a good cup of coffee)
- Rimini Bar (perfect when good weather)
- Cabaret Voltaire
- El Lokal (picture)
- Frau Gerolds Garten
- Kronenhalle (here they got original Picassos)



For clubs there are also a bunch of places to go, especially in Langstrasse or at Hardbrücke. Plaza is the place we have been most often, but it is really just to try out what you prefer.

## OUT OF CITY

This section is for many the most important of staying in Zurich; you have one hour to the alps, and in two or three hours you can be in all the neighboring countries. If you are going a bit far, check out [www.meinfernbus.de](http://www.meinfernbus.de) for extremely cheap tickets to for example Milano.

## SKI

This is the main reason I chose to go to Zurich. You could not find a better place to live, if you want to have a top notch university combined with the world's finest mountains. The opportunities are just endless.



It's also a worth to mention that skiing off piste in the Alps are something very different than most other places, if you are not familiar with this. Some places have cravasses, which you specially should be aware of. Pretty much everywhere you should be aware of the avalanche risk and bring your prope, beacon, shovel, and some friends with you. The Alps can be a bit crowded during the weekend, some places more than other, so take that into account as well, if you want a fresh line



A good deal if you go by train / bus, which you always can, is to buy the "Snow-and-Rail"-ticket at SBB. If you look a bit around for youth hostels, you find one pretty much nearby every resort. Now, here are my favorite resorts

- **Engelberg** is a completely insane resort. Very close to Zurich, and have the most amazing off piste. Top of the resort is a beautiful glacier, where you of course should avoid riding, but you should watch out even though you think you have passed the end. "Die Laub" is a easy and popular route, and you can have some amazing trips from the top, skiers right, where the bus can pick you up. Engelberg can be a bit crowded, so be there when the lift opens.
- **Andermatt** gives you extremely long runs, with a lot of opportunities. Not that crowded, and you will just have a good time here. Not cravasses and plenty of steep powder turn waiting. Also a especially good place for alpinist, and even a small fun park build in the middle of the resort. A good tip is to take the train to Oberalp Pass and hike your way up, and have an amazing trip down to Andermatt again.
- **Disentis** is probably my favorite free ride spot. A hidden gem just an hour with the train from Andermatt. Here I had my longest descents and the best of all; you even don't have to walk at all! From the top, skiers left, you have an amazing valley taking you all the way down to the first lift
- **St. Anton, Lech ++**
  - This place is just a monster. The resort is so big that you have no chance trying all the slopes during one winter, not to talk about the free ride routes. I prefer Rendl, which is not that crowded, and have a quite okay snow park, for being in the Alps. Also a lot of free ride opportunities, but watch out for rocks here and there. Crazy Austrian afterski packed with scandinavians and brits.

- **Laax**

- If you enjoy snow parks, this is a mecca. Probably the best park in Europe, with the legendary 2 km long, super creative jib line; P60. All the parks are up at Crap Sogn Gion. Check out “the Crap Show” at YouTube for the feeling for this, and you will understand what this place is all about

Also, if you are into cross country skiing, there are some good options around. The nearest will be Einsiedlen and Studen, while more exciting places like Engadin and Seiser Alm is also worth a try. Engadin has the largest ski marathon in Switzerland, while Seiser Alm is the place the national teams go to prepare and do height training. An incredible place, just over the Italian border, where you will experience the Dolomites from their best side.

## HIKING

Get yourself out during fall and spring; cure your Sunday hang over with a mountain climb. From Zurich you go to whatever place in a radius of 2 hour train, and it is ridiculously beautiful. This is a good way of getting to know Switzerland as well.

Some hikes I can recommend are

- Pizol, walk the five lakes
- Eggstock klettersteig, need harness, line and helmet
- Ebenalp, lots of various routes. Good one is hike up Ebenalp at the right side looking up where the gondola go



## AUF WIEDERSEHEN

I had an incredible year at ETH, both when it comes to the studies, and everything else. Wish you the best of luck, and that you exploit the opportunities as much as possible. Study hard & ski hard.

If any questions, you can reach me on [herman.hellenes@gmail.com](mailto:herman.hellenes@gmail.com)