#### **ETH** zürich



# Master Program in Electrical Engineering and **Information Technology**

Welcome and Information Event, ETZ E 6

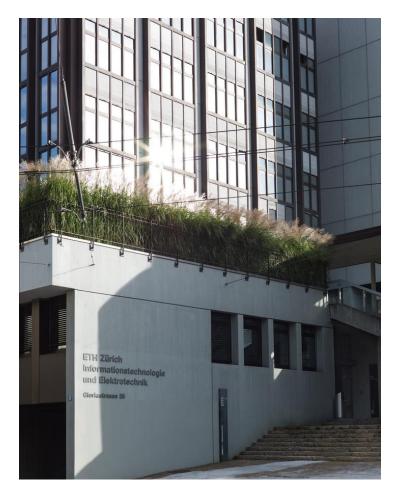
September 17, 2018

Reto Kreuzer, Coordinator of Studies D-ITET





# Welcome to the Department of Electrical **Engineering and Information Technology!**







## An international program

Joining approx. 120 ETH Zurich Bachelor graduates, more than 60 external students add to the international character of D-ITET's Master's level.

#### A very international programme:

Brazil, Canada, Chile, China, France, Germany, Iceland, India, Iran, Italy, Portugal, Romania, Serbia, Spain, Switzerland, Taiwan, Turkey, United Arab Emirates, United Kingdom, United States.

#### **Great variety of schools:**

Belgrade University / Bilkent University / BITS Pilani / Bucharest Politehnica University / California Institute of Technology / CentraleSupelec / Ecole d'ingénieurs et d'architectes de Fribourg / EPFL / Hochschule für Technik, Brugg-Windisch, Olten, Muttenz / Huazhong University of Science & Technology / IIT Roorkee / Isfahan University of Technology / Jilin University / KIT / Koc University / Manchester University / METU Ankara / Mumbai University / Nanjing University / NIT Karnataka / NIT Rourkela / North China Electric Power University & Edinburgh University / Politecnico di Milano / Politecnico di Torino / Pontificia Universidad Católica de Chile / Purdue University / Rochester Institute of Technology / Ryerson University / South China University of Technology, Guangzhou / Southeast University, Nanjing / Tianjin University / Tongji University / Tongji University & Uni Bologna / Tsing Hua University / Tsinghua University / TU München / UC Davis / Uni Stuttgart / Uni Zaragoza / Universidade de Brasília / Universidade de Coimbra / Universitat Politècnica de Catalunya / University of British Columbia / University of Iceland / University of Miami / University of Washington / Visveswaraiah Technological University / Wuhan University & Université Lyon 1 / Xi'an Jiaotong University / ZHAW Winterthur



#### **ETH** zürich

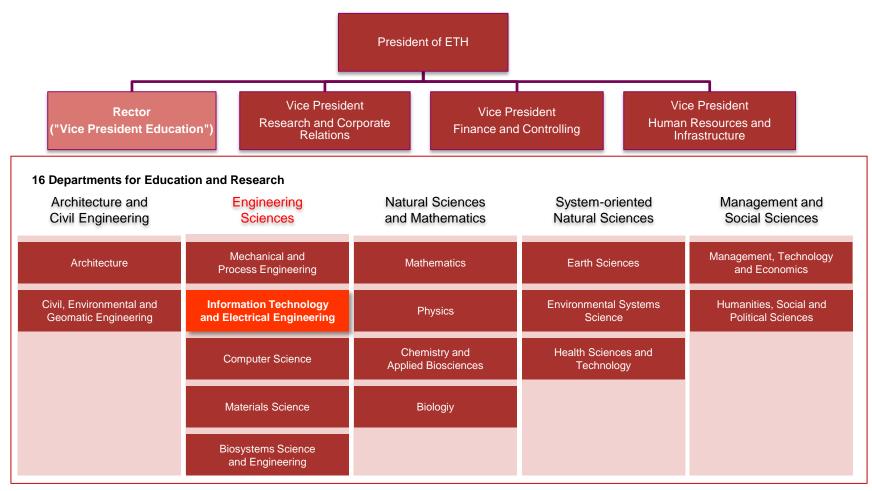


ETH and ITET: structure & key figures





## ETH Zürich: Organization and structure







#### **D-ITET: Size and members**

- 11 laboratories (institutes) und 5 independent professorships
- 35 professors (4 women)
- 100 lecturers in total
- ca. 500 scientific and administrative employees
- ca. 400 PhD students
- ca. 1'300 undergraduate, master and exchange students



#### 35 Professors of D-ITET



Prof. Luca Benini





Prof. Helmut Bölcskei



Prof. Colombo Bolognesi



Prof. Gian-Luca Bona



Prof. Florian Dörfler



Prof. Christian M. Franck



Prof. Orgun Göksel



Prof. Benjamin Grewe



Prof. Ulrike Grossner



Prof. Richard Hahnloser



Prof. Qiuting Huang



Prof. Gabriela Hug



Prof. Maryam Kamgarpour



Prof. Johann W. Kolar



Prof. Ender Konukoglu



Prof. Sebastian Kozerke



Prof. Amos Lapidoth



Prof. Jürg Leuthold



Prof. Hans-Andrea Loeliger



Prof. Mathieu Luisier



Prof. John Lygeros



Prof. Lukas Novotny



Prof. Klaas P. Prüssmann



Prof. Markus Rudin



Prof. Marco Stampanoni







Prof. Luc Van Gool



Prof. Laurent Vanbever



Prof. Janos Vörös



Prof. Roger P. Wattenhofer



Prof. Armin Wittneben



Prof. Vanessa C. Wood



Prof. Mehmet Fatih Yanik





# Students at ETHZ and D-ITET (2017 figures)

Students at ETH Female Students * International Students **  Students at D-ITET Female Students * International Students **	20'607 32 % 34 % 1'769 18 % 45 %	
Students at bachelor level (years 1 to 3) ETH D-ITET	9'262 <b>700</b>	* 31% / ** 13% * 14% / ** 18%
Students at master level (years 4 to 5) ETH D-ITET  Electrical Engineering MSc Biomedical Engineering MSc (with D-HEST, D-MAVT and D-PHYS) Energy Science & Technology MSc (with D-MAVT and D-MTEC) Neural Systems an Computation MSc (with University Zurich)	<b>377</b> 93 101	* 43% / ** 57%
Exchange students ETH D-ITET	449 <b>45</b>	* 36% / ** 94% * 22% / ** 100%
PhD students ETH D-ITET	4'902 <b>400</b>	* 26% / ** 59% * 18% / ** 71%



#### **ETH** zürich



ETH and ITET: find the right contact



### Your most important contacts

ETH / Rectorate

Registrar's Office (HG F 19)

**General administrative questions** e.g. matriculation, address changes, residence etc.

Students' association

AMIV (CAB E 37)

Social contacts, networking



D-ITET / central services

Student Admin (ETZ H 85)

**Study specific admin. questions** e.g. grades/transcripts, waivers, counselling

Tutors / Lecturers / TA

Course specific questions, study plan





## **Contact persons at D-ITET**



Prof. Jürg Leuthold Director of studies

**ETZ K 81** +41 44 632 80 10 leuthold@ethz.ch



Reto Kreuzer Coordinator of studies, Student advisor **ETZ H 83** +41 44 632 50 03 reto.kreuzer@ee.ethz.ch

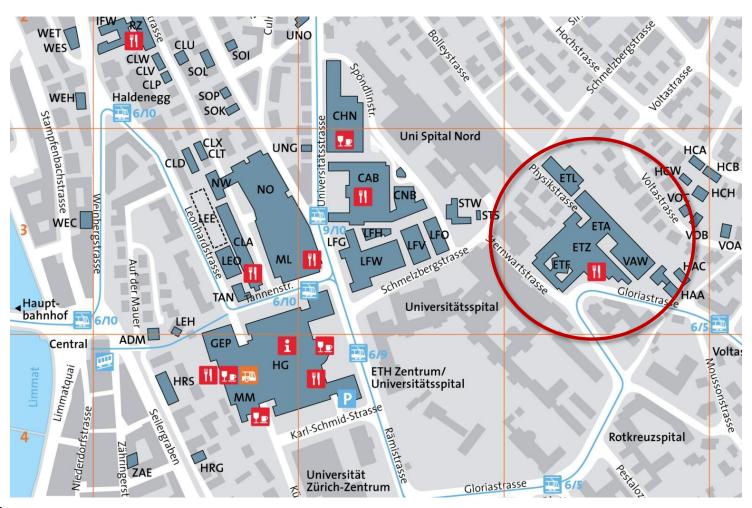


Doris Döbeli Student Administration

**ETZ H 85** +41 44 632 50 03 info@ee.ethz.ch



# **Map of ETH and D-ITET**







#### Where do I find information on the web?

General Information on studies at ETH

ETH students' website: www.ethz.ch/students

Information on the Master in Electrical Engineering

D-ITET website: www.ee.ethz.ch > Studies > Main Master Program

Course catalogue

Online: <u>www.vvz.ethz.ch</u> > Programme > Electrical Engineering (...) Master

Messages from ETH and the Department

Email on your ETH-Address (<u>username@student.ethz.ch</u>)

→ check your mailbox regularly and read the messages carefully!





### Your studies are subject to regulation

Study regulations (mostly available in German only)

www.rechtssammlung.ethz.ch (complete collection, German)
www.ee.ethz.ch > Studies > Forms and Documents (MSc EEIT regulations in English)

Rector's Directives (some available in German only)

www.ethz.ch/students > Studies > Legal basis > Directives Collection

International students, please contact Ms Annina Wanner at the Rectorate (Main Building, HG F 22.3) or D-ITET's Study Administration (ETZ H 85) for help on regulations.



#### **ETH** zürich

$$\int_{\partial V} (\mathbf{E} \times \mathbf{H}) \cdot \mathbf{n} \, da + \frac{\partial}{\partial t} \int_{V} \frac{1}{2} \left[ \mathbf{D} \cdot \mathbf{E} + \mathbf{B} \cdot \mathbf{H} \right] dV =$$

$$- \int_{V} \mathbf{j} \cdot \mathbf{E} \, dV - \frac{1}{2} \int_{V} \left[ \mathbf{E} \cdot \frac{\partial \mathbf{P}}{\partial t} - \mathbf{P} \cdot \frac{\partial \mathbf{E}}{\partial t} \right] dV - \frac{\mu_{0}}{2} \int_{V} \left[ \mathbf{H} \cdot \frac{\partial \mathbf{M}}{\partial t} - \mathbf{M} \cdot \frac{\partial \mathbf{H}}{\partial t} \right] dV$$



**Courses, Credits and Exams** 



#### The Master's Degree Program

- Courses (3 semesters, 66-78 credits)
  See the <u>course catalog</u> for the list courses. Each student must find a <u>tutor</u> by him/herself and submit a tutor agreement in myStudies no later than four weeks after the beginning of the first semester.
- 1-2 semester projects (14 weeks, 12 credits)
   14 weeks half-time during the semester (or 7 weeks full-time outside the semester). Project offerings are published on the websites of the individual labs.
- Internship in Industry (3-6 months,12 credits)
   Not mandatory. In a company outside ETH
- Master Project (6 months, 30 credits)
   After all else is done, the masterpiece of your studies at ETH.



## **Core & Specialization Courses (24 + 40 credits)**

- The <u>tutor</u> helps with the selection of courses, these courses permit a specialization in one of the following (teaching) areas:
  - Communications
  - Electronics and Photonics
  - Computers and Networks
  - Systems and Control
  - Energy and Power Electronics
- Core courses (24 credits) must be from our list of core courses but can be selected across specializations in agreement with the tutor.
- Specialization courses can be selected freely, subject to approval by the tutor. See the <u>course catalog</u> for the list of courses.
- The tutor's area of research will influence the choice of courses he/she is willing to accept – choose your tutor accordingly.





### The choice of specializations is broad

#### **Electronics and Photonics** Integrated Systems Laboratory **Electronics Laboratory** Choose a tutor from our research areas Millimeter-wave Electronics Laboratory Electronics and Photonics Institute of Electromagnetic Fields Information and communication **Photonics Laboratory** Photonics Laboratory, Empa Energy Biomedical Engineering / Neuroinformatics Information and Communication Communication Technology Laboratory Energy **Automatic Control Laboratory** Power Systems and High Voltage Laboratories Computer Engineering and Networks Laboratory Laboratory for High-power Electronic Systems Signal and Information Processing Laboratory Computer Vision Laboratory Power Electronic Systems Laboratory Advanced Power Semiconductor Laboratory





## **Electives, Internship or Project?**

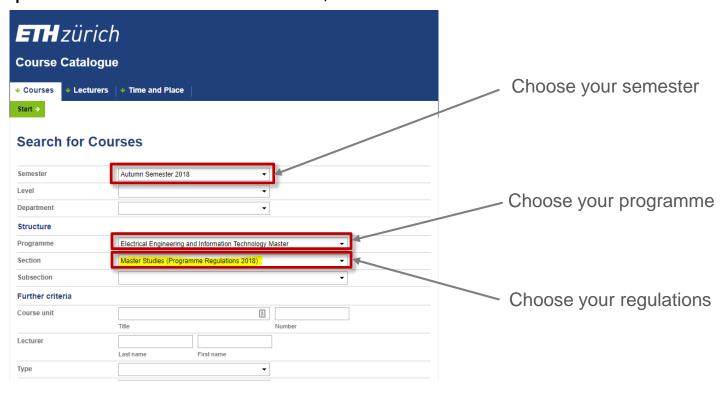
- Elective courses (12 credits) are meant to add a management, economics or law component to the curriculum. A list of recommended courses is available in the course catalogue. However, the choice is not limited to this and even more specialization or core courses may be chosen instead. Elective courses are subject to the agreement of the tutor.
- Students can choose a second semester project (12 credits) instead of elective courses, we suggest to discuss this with the tutor – even though the choice is not subject to the tutor's agreement – he/she may help deciding what the best curriculum is for you.
- Another alternative is the Internship in Industry (12 credits)j. It is carried out in a company outside ETH and usually lasts between 3 and 6 months. An extra semester must therefore be counted for an internship. Attention, since the internship is not mandatory non EU/Swiss citizens may encounter problems getting a work permit!



# Navigating to the right section in the course catalogue

When looking up courses offered in fall 2018, make sure to look for the 2018

regulations.

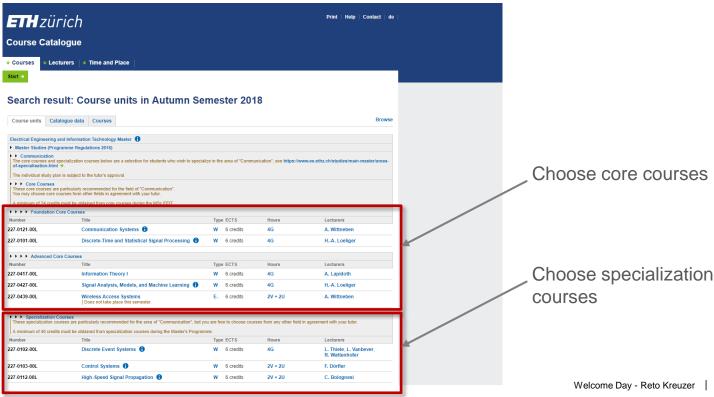






# Choose courses from the course catalogue (current semester)

The courses are listed in the course catalogue according to the areas of **specialization** of the D-ITET.

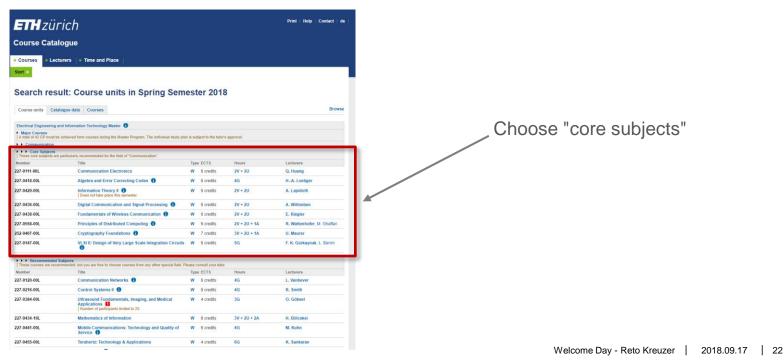






# Choose courses from the course catalogue (spring semester)

Spring 2019 courses will be published in November 2018, for core courses in your tutor agreement choose "Core Subjects" form the Major Courses of the previous regulations (spring 2018). Note that you may have to change your tutor agreement next semester to reflect possible updates/changes in the course list.







## Submitting a tutor agreement: Best practice

Tutor agreement forms are submitted in myStudies. However, for the sake of simplicity, we suggest the following approach.

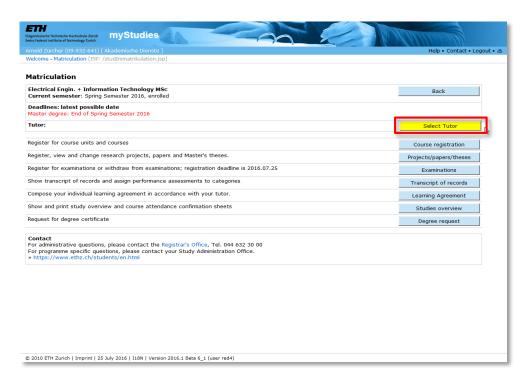
- If you do not have a tutor yet, decide which professors' research areas best fit your study interests (see the <u>program's website</u>).
- Put together a list of courses in a tentative tutor agreement form without submitting it. Print this list out and/or take your computer to the meeting.
- Meet the potential tutor(s) and discuss your choice of courses.
- If you and the tutor agree to a list and only then select your tutor in myStudies, wait for confirmation and then *formally* submit the list of courses agreed upon during the discussion with your tutor.
- In any case, please ask your tutor for his/her favorite way of handling the tutor agreement process.





## Choosing a tutor in myStudies

Navigate to "Matriculation" in your myStudies account and choose "Select Tutor"



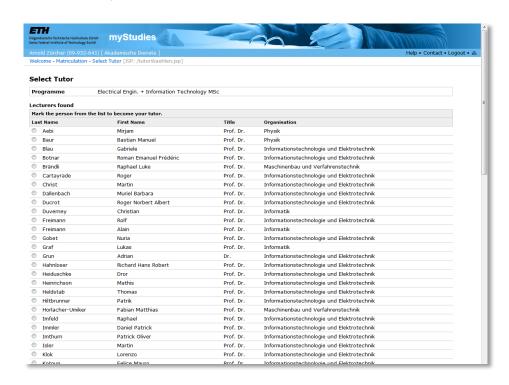
Discuss your choice with the proposed tutor **before** submitting it in myStudies.





## Choosing a tutor in myStudies (cont'd)

Choose your tutor from the list of available tutors (example list below):

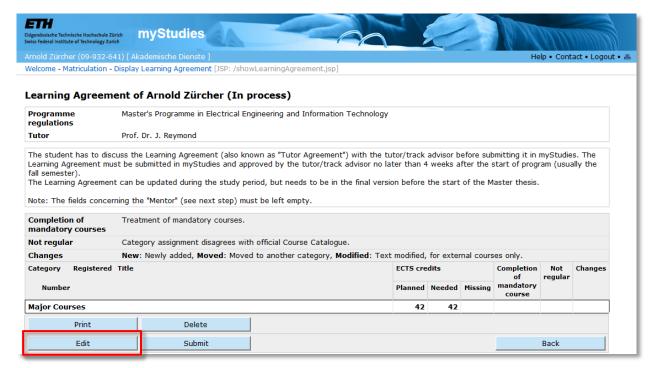


The tutor will have to **confirm** in order to make your choice effective.



## Create learning agreement in myStudies

The **Tutor Agreement** is called "Learning Agreement" in myStudies, select this from the "Matriculation" page: you are now able to select courses from the course catalogue, by using the "Edit" button.

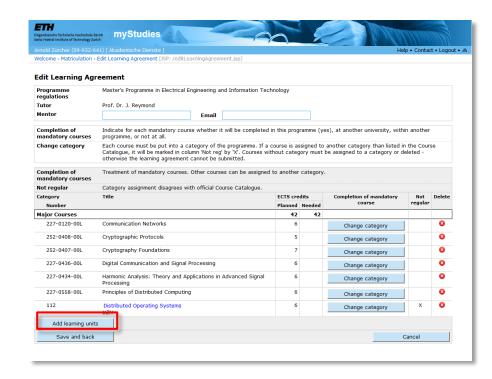






### **Edit learning agreement**

Once **all the courses** you wish to enrol for during the upcoming year are entered, your learning agreement is ready for discussion with your tutor.

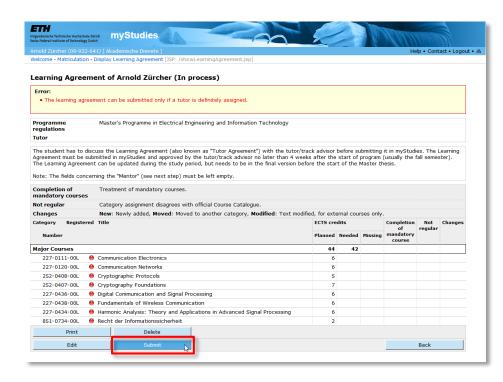






## Submit learning agreement

The learning agreement can only be submitted if you have a tutor. If you do not, an error warning (see above) will appear.



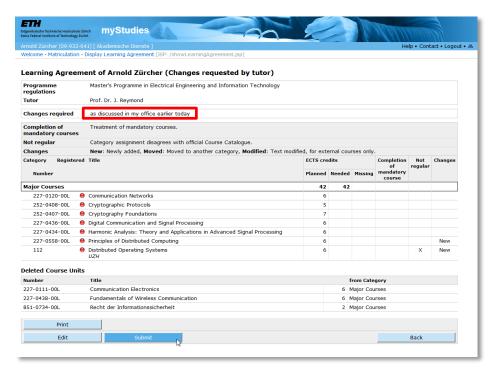




## myStudies: Change learning agreement

If you have not discussed your learning agreement before submitting it and the tutor requires you to change it or if the initial tutor agreement must be changed for any reason at a later point in time (with the agreement of the tutor) you may

be invited to change it:







# Department of Humanities, Social and Political Sciences (D-GESS)

- Learn to **contextualize** specialized knowledge:
  - putting natural and technical sciences in social, political, economical and cultural contexts;
  - understanding global conditions and consequences in terms of action in politics, culture and economy;
- The courses offered by the D-GESS "Science in Perspective (SiP)" are mandatory for all students at ETH, everyone must earn at least 2 cp during their Master's Degree studies.
- Choose between **Type A** (general) and **Type B** (specially recommended for your curriculum) courses from the course catalogue.
- For language courses, special rules may apply (see <u>directives collection</u>).

Contact: Study Admin D-GESS, Ms. Viola Gloor, viola.gloor@gess.ethz.ch

On the web: www.gess.ethz.ch





### **Students online portal – Reminder**

Your administrative duties (on www.mystudies.ethz.ch):

- **Enrollment to courses and exams** 
  - Register for each semester until the end of the second week.
  - Register for courses (early in the semester; you need to be registered for a course to enroll for an exam)
  - Submit the tutor agreement (until the end of the 4<sup>th</sup> week).
  - Enroll for exams please enroll during the 3<sup>rd</sup> and 4<sup>th</sup> week of the semester (withdrawal possible until very late).
- Notify us of your address changes
- Read your E-Mails





### **Enrolling for courses – Reminder**

- All courses you wish to count towards your Master Diploma must be enrolled for (both the course and the exam);
- Only courses agreed upon by your tutor will count for the degree, other courses go on a separate sheet, attached to the final transcript.
- In particular, do not forget to enroll for the Semester Projects and the Master Thesis (special section in myStudies "Projects/Papers/Theses).
  - Note the **list of possible supervisors** on our <u>website</u>: only professors of the D-ITET or associated professors can officially supervise projects and theses.





## Performance Assessments (Examinations)

#### Three types of performance assessments:

- 1. Session examination (Attention to registration/deregistration deadlines) (Winter session: January/February – Summer session: August)
- 2. End-of-semester examination (Attention to registration/deregistration deadlines)
- Graded/ungraded semester performance (e.g. semester project or internship in industry) (Attention minimum/maximum allowed time/deadlines)

#### Where to find the type of examination and allowed (written) aids?

- Course catalogue > see "Performance assessment"
- Personal exam schedule in myStudies (for session examinations)
- Lecturer/examiner





#### Code of conduct

« At D-ITET, we maintain an inclusive, open and friendly environment, where our students, employees and faculty can thrive and achieve their highest potential, based on mutual respect. To preserve this cordial environment, we do not tolerate misbehavior of any kind, including threats, violence, bullying, sexual harassment, discrimination, or dishonesty in study and in research. »

Prof. Vanessa Wood, Head of Department





#### Further information on the Web

- Our principles
- What is "inappropriate behaviour"?
- How to react?
- Contacts / support







#### **ETH** zürich



## **Useful information**





#### Computer infrastructure at ETHZ / D-ITET

- All ETH Computers (e.g. Main Building HG D 11, or ET-Building ETZ D 61.1) require your n.ethz password (same as used for myStudies).
- Only ITET students can access the computer infrastructure in the ET-building area, should you encounter a problem, contact support@ee.ethz.ch (IT support office ETF D 106).
- Project Neptun: During a short period (until October 1), laptops may be purchased through ETH (see <a href="www.projektneptun.ch">www.projektneptun.ch</a>).
- **IDES:** ETH also offers software at very low cost, some products even for free (see <a href="http://idesnx.ethz.ch">http://idesnx.ethz.ch</a>). Remember: the use of non-licensed software is forbidden and subject to criminal prosecution!



#### Counselling at D-ITET and the rectorate

- Course selection: your tutor.
- Studies at D-ITET in particular (deadlines, failures at examinations etc.): the <u>coordinator of studies</u>
- Studies at ETH in general: the international student support
- Time management/motivation: ETH student coaching
- Difficult phases/personal problems: the psychological counselling <u>service</u> (free of charge and confidential)





#### More details?

#### My Office

Reto Kreuzer, Study Coordinator D-ITET, ETZ H 83 Please send an E-mail to fix an appointment (reto.kreuzer@ee.ethz.ch)

#### This presentation

Available tomorrow morning on www.ee.ethz.ch > Studies > Forms and Documents



# **Enjoy your studies at ETH Zurich!**

