

Welcome at D-ITET!

Welcome Event for new doctoral students

17 June 2024

Welcome



Prof. Christian Franck

- Professor for High-Voltage Engineering
- Director of Studies at D-ITET

Welcome



Virginie de Mestral

- Doctoral student at the Integrated Systems Laboratory
- President of **vm**itet



Reto Kreuzer

- Head of student administration D-ITET
- Coordinator of studies and student advisor D-ITET



Adrian Anner

Human Resources (HR) Partner for D-ITET

Programme

1. ETH and D-ITET

- 2. Introduction vmitet
- 3. Doctoral studies, research and teaching
- 4. Some employment information
- 5. Further information & contact persons
- 6. Code of Conduct



History

2001	Foundation of the Department of Information Technology and Electrical Engineering (D-ITET)
1996	Department Website goes online (<u>www.ee.ethz.ch</u> -> The Department -> History of the Department)
1989	Foundation of the Department of Electrical Engineering (D-ELEK)
1980	Completion of ETZ building at Gloriastrasse 35
1973	Completion of ETL building at Physikstrasse 3
1950	Completion of ETF building at Sternwartstrasse 7
1935	Establishment of the Division of Electrical Engineering with 241 enrolled students
1912	Foundation of the Electrotechnical Institute , housed in the Federal Physics building at Gloriastrasse 35



Rankings



THE World University Ranking, Times Higher Education (2024):
 Nr. 11 worldwide
 Nr. 11 in Electrical & Electronic Engineering

Academic Ranking of World Universities (2024):
 Nr. 20 worldwide
 Nr. 16 in Electrical & Electronic Engineering

QS World University Ranking of Quacquarelli Symonds (2024): Nr. 7 worldwide
Nr. 4 in Electrical & Electronic Engineering

Mission





Faculty



Prof. Morteza Aramesh



Prof. Laura Bégon-Lours



Prof. Luca Benini



Prof. Jürgen Biela



Prof. Helmut Bölcskei



Prof. Colombo Bolognesi



Prof. Florian Dörfler



Prof. Christian M. Franck



Prof. Benjamin Grewe



Prof. Ulrike Grossner



Prof. Richard Hahnloser



Prof. Gabriela Hug



Prof. Giacomo Indiveri



Prof. Taekwang Jang



Prof. Lana Josipovic



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. Valerio Mante



Prof. Onur Mutlu



Prof. Lukas Novotny



Prof. Mickaël Perrin



Prof. Klaas P. Prüssmann



Prof. Daniel Razansky



Prof. Kaveh Razavi



Prof. Marco Stampanoni



Prof. Klaas Enno Stephan







Prof. Laurent Vanbever



Prof. János Vörös



Prof. Hua Wang



Prof. Roger P. Wattenhofer



Prof. Vanessa C. Wood



Prof. Mehmet Fatih Yanik



Prof. Maksym Yarema



Prof. Fisher Yu



Faculty – Electronics and Photonics



Prof. Morteza Aramesh



Prof. Laura Bégon-Lours









Prof. Colombo Bolognesi



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Prof. Vanessa C. Wood



Prof. Mehmet Fatih Yanik



Prof. Maksym Yarema



Prof. Fisher Yu



Faculty - Energy



Prof. Morteza Aramesh



Prof. Laura Bégon-Lours



Prof. Luca Benini





Prof. Helmut Bölcskei



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Prof. Vanessa C. Wood



Prof. Mehmet Fatih Yanik



Prof. Maksym Yarema



Prof. Fisher Yu

Faculty – Information and Communication



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Prof. Marco Stampanoni



Prof. Klaas Enno Stephan



Prof. Christoph Studer



Prof. Luc Van Gool





Prof. János Vörös



Prof. Hua Wang



Prof. Roger P. Wattenhofer



Prof. Vanessa C. Wood



Prof. Mehmet Fatih Yanik



Prof. Maksym Yarema



Prof. Fisher Yu



Faculty – Biomedical Engineering and Neuroinformatics



Prof. Morteza Aramesh



Prof. Laura Bégon-Lours









Prof. Colombo Bolognesi



Prof. Florian Dörfler



Prof. Christian M. Franck



Prof. Benjamin Grewe





Prof. Richard Hahnloser



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Prof. Mehmet Fatih Yanik



Prof. Maksym Yarema



Prof. Fisher Yu



Department Management

Head of Department



Jürg Leuthold

Deputy Head of Department



Gabriela Hug

Director of Studies



Christian Franck

Delegate for Communication



Mathieu Luisier

Statistics

	2010	2015	2023	Change (2010-23)
Students	1254	1624	2427	+94%
Bachelor students	509	672	793	+56%
Master students	375	507	1080	+188%
Guest students, post-graduate students	27	42	81	+200%
Doctoral students	343	403	473	+38%
Professors (FTE)	26.1	32.8	35.7	+37%
Full Professors	21.7	28.4	28.5	+31%
Assistant professors (incl. tenure track)	4.4	4.4	7.2	+64%
Personnel (FTE)	455.5	522.2	666.3	+46%
Scientific staff (incl. doctoral students)	381.6	450.5	590.8	+55%
Technical, IT and administrative staff (incl. apprentices)	73.9	71.7	75.5	+2%

^{*} official 2023 figures not yet available



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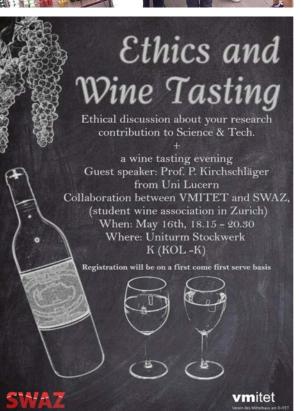
vmitet: Association of the *Mittelbau* at ITET

We represent your voice at D-ITET and at the ETH-level

We support your career with personal development tools + instructive seminars

We organize social events to strengthen our community and help you build your network





RESILIENCE A seminar on how to manage, adapt, and rebound from internal and external challe

May 22nd, 2024
16:00 - 17:15
Zentrum, Room: TBD

Followed by
VMITET monthly apéro



Vmitet board



Vice-president President Treasurer

Apero



IEEE link

Politics





Comm, politics

Helpdesk



politics

Contact Details

https://www.vmitet.ethz.ch
vmitet@ee.ethz.ch
vdemestral@iis.ee.ethz.ch



politics

D-ITET Helpdesk





Listen and Advise

We help to clarify your needs and offer advice.



Provide Guidance

We help navigating through ETH's rules and resources and also academia in general.



Assistance

We de-escalate or mediate conflicts with your colleagues or supervisors.



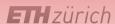
Coaching

We help improving your situation and discuss your future.



Patrick

- 4th year PhD student
- Computer SecurityGroup (COMSEC), TIK



Diversity and Inclusion at D-ITET







Leonard Deuschle

Create an open discussion and transform institutional culture

Contact us diversity@ee.ethz.ch



Drinks of the World



Overcoming Bias in Academia



Role of Diversity in Innovation



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What is "Research"?

...a detailed study of a subject, especially in order to discover (new) information or reach a (new) understanding

[Cambridge Dictionary]

Most important difference to your studies:

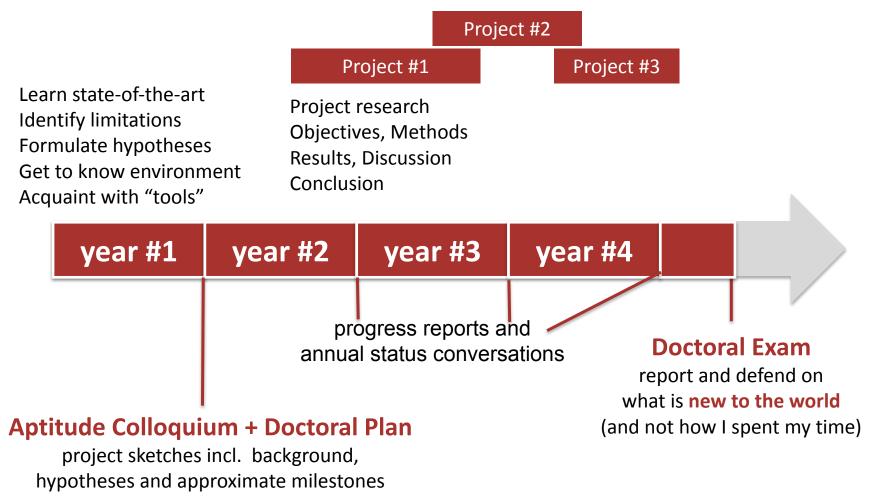
What is new to me versus what is new to the world

School Undergraduate studies

Graduate studies Research degree (PhD)



How is the doctorate structured at ETH and D-ITET?





What is a doctoral plan?

- to be written within the first year by you.
- declaration of intent between you and your doctoral thesis supervisor ("making the implicit explicit")
- should be conceived as a living instrument. Changes are possible and almost certainly necessary. Major changes should be documented in the annual status conversations.

Should cover the following topics:

- research proposal
 (abstract, introduction and current state of research in the field, progress of work to date and objectives, detailed work plan, timetable, references)
- teaching responsibilities
- other duties (e.g. operation or maintenance of equipment etc.)
- extended doctoral studies (if relevant)



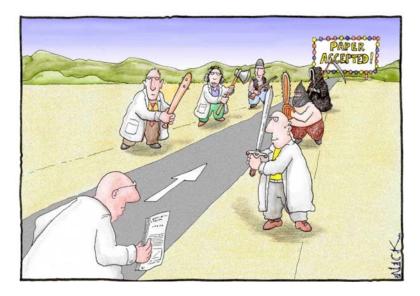
Any "Research" advice?

- Be pilot and driver of your projects
- Take ownership and communicate
- Arrange for regular personal meetings with supervisor (prepare them well for optimal use
 of time and to get the feedback/information that you need)
- Nobody solves everything by her/himself: seek feedback and advice from your advisor(s),
 colleagues, experts in the field,
- Keep work-life balance (despite bumpy roads)

Why research papers?

- A research project is never finished a paper forces you to report, discuss and conclude your current results and relate them to overall progress in the field
- You learn to defend your work objectively and critically during review process
- Much easier to do this in smaller steps rather than once at end of your doctoral work
- Papers document your progress relative to your peers and hence allow you to gauge your performance
- Papers make your data & results accessible to outside world ("ETH open access policy")

https://ethz.ch/en/research/open-science/open-access.html



Second advisors

- All doctoral students must agree on a second advisor within the first year of doctoral studies – contact your (first / main) supervisor for more information.
- The second advisor provides additional academic mentoring and support to doctoral student.
- The second advisor must hold a doctoral degree him / herself.

https://ethz.ch/students/en/doctorate/second-advisor.html

Yearly updates – after first year

What is the aptitude colloquium?

- In-depth discussion of the first year of doctoral studies based on the
 doctoral plan between the doctoral student and a committee composed
 of the supervisor, the second advisor and a chair ("aptitude colloquium")
 on the progress of the research project, doctoral studies, work situation in
 research group etc.
- Committee decides on continuation of doctoral studies
- Mandatory for all doctoral students

Plan your AC by logging in onto http://acd.ee.ethz.ch

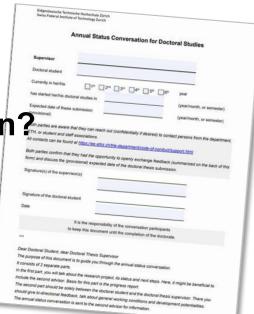


Yearly updates – following years

What are the progress report and annual status conversation

- Discussion between doctoral student and supervisor based on a
 progress report of the research project, doctoral studies, work
 situation in research group, as well as development
 opportunities.
- Mandatory for all doctoral students once per year

https://ee.ethz.ch/doctoral-studies/forms-and-documents.html



"Becoming a Researcher"

"The doctoral degree provides certification of the ability to conduct high-quality scientific research and is conferred on the basis of an original thesis and an oral examination."

[Rector's Implementation Provisions for the ETH Zurich Ordinance on the Doctorate, RSETHZ 340.311en]



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But becoming a researcher goes beyond "hard facts"

- Knowledge and intellectual abilities
- Personal effectiveness
- Research governance and organisation
- Engagement, influence and impact

[Researcher Development Framework]





Doctoral studies – credit point requirements

During doctoral studies, all doctoral students must acquire at least 12 credit points ECTS form courses (or equivalent).

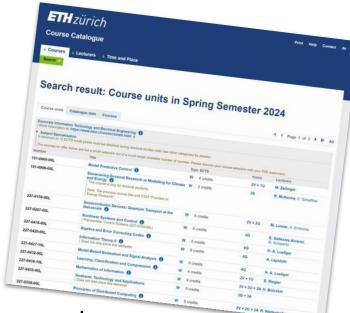


- **A.** Subject specialization deepen knowledge in the area of research field and extend knowledge outside of it
- **B.** Transferable skills Enable cross-disciplinary competences. **1 ECTS** at least must be from an **ethics course**, e.g. 851-0178-00L Ethics and Scientific Integrity for Doctoral Students, 227-0809-00L Ethics in Technology etc.
- **C.** Integration into Scientific Community e.g. conferences, summer schools etc.

Courses must be agreed upon with the supervisor in a learning agreement (see myStudies).

For more information and details see the **D-ITET** website.





A few years ahead – completing your doctoral studies

A few useful things when you graduate

Start the **process early** (ca. 6 months before the planned examination date)

Discuss the final steps with your supervisor, look for an examination date, (if still missing) find co-examiners – must be approved by department – and the exact thesis title.

When you need its decision, remember that the **doctoral committee** only meets **once a month** (see <u>upcoming dates</u>), act accordingly!

Don't forget to finalize the learning agreement - you cannot apply for the defense without it.

Check our website for **important deadlines** and ask the doctoral administration in case of doubt.



Education at ETH and your role in it

Education at ETH Zurich – a quick overview

• Your interaction with bachelor's and master's degree students

• Teaching as an opportunity?

Education at ETH Zurich

- A comprehensive offer currently over 20 BSc and close to 50 MSc programmes
- Compact study programmes
 - Bachelor's Degree Programs are 6 semester (3 years),
 Language of instruction is mainly German in year 1+2 and English in year 3.
 - Master's Degree Programs are 4 semester (2 years), teaching language is English.
- ETH Zurich is a research university teaching at ETH is a combination of sound scientific foundations and practical application in industry and research.





D-ITET bachelor's and master's curricula

Semester 10: Master's Thesis (6 months) Interdisciplinary Master 1000 Master's Main ("consecutive") Master's Degree (2 years) students Programmes **Programme** Semester 7-9: courses and semester projects Direct Admission of external candidates upon application admission (ca. 40-60% of cohort at D-ITET, depending on MSc) **Areas of specialization** Semester 5 and 6 (courses, labs and bachelor's thesis)

- Communications
- Computers and Networks
- Electronics and Photonics
- Energy and Power Electronics
- Systems and Control
- Biomedical Engineering

Compulsory Basic Courses

Semester 1 to 4 (2 years)

Bachelor 900 (3 years) students



D-ITET master's degree programs

Programmes offered

- MSc Electrical Engineering and Information Technology (consecutive)
- MSc Biomedical Engineering (interdisciplinary)
- MSc Energy Science and Technology (interdisciplinary)
- MSc Quantum Engineering (interdisciplinary)

Common to all D-ITET master's degree programmes

- Tutor-based programmes: a professor helps students select courses
- 1-2 academic projects (14 weeks, part-time during the semester): Training for master thesis.
- A master's thesis (6 months, full-time) is the culmination of the programme



Your interaction with undergraduate (BSc/MSc) students

Semester	Course type	Specifics
All	Lectures	Ex-cathedra, usually held by a professor (graded exams)
All	Exercises	Solving exercises, usually in smaller groups, supervised by teaching assistants – doctoral students or senior undergraduate students (teaching assistants)
All	Exams	Various types (written, oral) and schedules (end-of-semester, session), corrected mostly by doctoral students
1 to 6	Lab courses	1 compulsory lab per semester (1 st / 2 nd year), afterwards free choice of lab courses, most labs offered by doctoral students .
3 to 6	Projects & Seminars	Various type of small projects or seminars ranging form a few meetings to all-semester offers, various groups, usually supervised by doctoral students or self-supervised by student TA.
5 and 6	Group Projects / BSc thesis	Small third year BSc projects in groups, usually supervised by doctoral students .
7 to 9	Semester projects	Compulsory at the MSc level, <u>alongside courses</u> , 14 weeks, ca. 25h per week, routine, day-to-day supervision by doctoral students . Official supervision and grading by professor, projects finish with a written report and presentation
10	MSc thesis	Final project, sometimes at very advanced academic level. Supervision, grading and presentation as in semester projects (doctoral students + professors)

In a nutshell

- Teaching at **ETH** is interdisciplinary, courses offered in various programmes / students with different backgrounds keep in mind when addressing students' questions
- Admission of students without an ETH-Bachelor's degree further diversifies student body
- Students' workload in first two years of Bachelor programme is very high but varies largely in third year and higher
- Final exams play a very important role at ETH (few midterms), particular care in grading exams is important
- Semester projects and master's theses are the culmination of each programme, different students need different levels of supervision
- If you encounter problems don't hesitate to ask!

For study related questions, contact info@ee.ethz.ch

Teaching Responsibilities ... and Opportunities!

- Teaching is a stepping stone in any academic career
 - consider it an opportunity
- There are many levels of teaching, starting at rather informal lab courses,
 managing exercises, supervision of projects/theses and regular teaching in classes
- For regular teaching in classes, you should get a <u>teaching assignment</u> and appear in the course catalogue as lecturer

You want to **get better at teaching?** – check out the <u>offers</u> of the group for **educational development**, e.g., didactic courses, teaching labs, refresh teaching, etc.



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Rules, regulations, directives – doctoral students with an employment at ETH

Duration of employment contracts

- Employment lasts from the date of matriculation until the doctoral examination, up to 6 years
- First employment contract is 18 months, subsequent contracts 12 months each, final phase before doctoral examination 3 months possible

Employment level

100%, part-time employment only in special cases

Progress report and status conversation

A status conversation must be conducted each year

• Extension of the employment contract

- Communication: Preferably six months (and at the latest three months) before the contract expires
- o Initiation of the extension process: Two months before the contract expires at the latest
- If the contract is not to be extended, the doctoral candidate must be informed (in writing) 3-6 months in advance.

Legal basis doctorate



^{*}applies to newly matriculated doctoral students from 01.01.22 and already matriculated doctoral students from 01.01.23

Salary – doctoral students with an employment at ETH

- Fixed rates for Doctoral students / Postdocs / Scientific Assistants I & II
- Payment is in 12 monthly instalments
- Automatic increase every year until 3rd-year-rate
- Obligation to top up the salary to at least the standard rate (SNF) for doctoral students with a scholarship or - where possible, to the usual rate for the Institute / Professorship
- Employees with children of minor age or children in education receive a family allowance

Policy D-ITET:

- Each Institute / Professorship handles the salary rates transparently and ensures a fair distribution of work in teaching and service.
- This must be applied consistently for all group members



Vacation and absences – doctoral students with an employment at ETH

- Register absences in <u>ETHIS</u> obligation for scientific personnel: vacation and absences only
- 5 weeks of vacations / year
- Vacation days must be taken in the year the entitlement arises, at least once 2 weeks in a row
- Your supervisor is allowed to decide when vacations can be taken plan and discuss your vacation plans early in order to ask for an early approval
- Vacation means regeneration it is not allowed to reduce the annual entitlement
- Accidents must be reported through the Human Resources webpage
- A doctor's certificate or accident certificate is required after 3 days of absence

Regulations for the recording of working time and absences
Personnel Law ETH domain



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Doctoral administration



Reto Kreuzer (ETZ H 83)
Head of student administration D-ITET reto.kreuzer@ee.ethz.ch
044 632 0815 (upon appointment)

Ask your supervisor and the administration / secretary of your lab for inside knowledge!

Contact person for

Student counselling, curricula questions and regulations



Yasemin Tomaschett (ETZ H 85)
Doctoral administration D-ITET

doktorat@ee.ethz.ch

044 632 3336 (Monday, Wednesday, Thursday)

Contact person for:

All administrative steps regarding doctoral programme from official application to doctoral exam

Human Resources



Adrian Anner (ETZ H 86) HR Partner D-ITET adrian.anner@vppl.ethz.ch +41 44 633 26 46

Contact person for

provides support in operational personnel management, labour law issues, retention and development, conflicts, consulting



Melanie Rösch (OCT F19)
Personnel administration D-ITET
melanie.roesch@vppl.ethz.ch
+41 44 633 80 72

Contact person for

Residence / work permits, family allowance, social insurances, accident and sickness

Contact and Advice Services



- <u>Support contacts at D-ITET</u> First point of contact: you can always turn to our designated D-ITET contact person (Prof. Ch. Franck or R. Kreuzer for teaching-related issues / A. Anner for HR issues)
- ETH advice and conciliation service "respect" Provides all members of ETH with advice and support regarding bullying, harassment and discrimination
- Ombudsperson and confidants General contact point for conflicts and issues concerning integrity and scientific misconduct
- <u>Psychological Counseling Service</u> Free of charge service open to all students and doctoral students at the UZH and ETH Zurich
- <u>Safety, Security, Health and Environment (SSHE)</u> Responsible for safety and security as well as the health of the ETH members.

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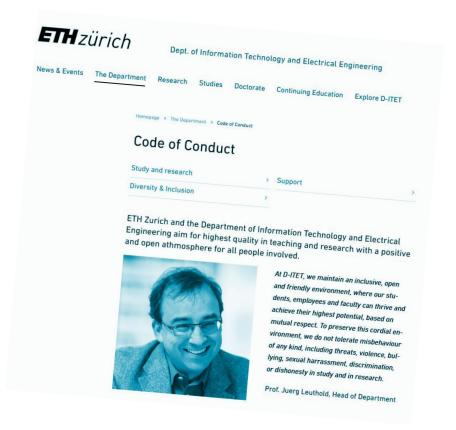
6. Code of conduct

"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."

See our website for:

- Our principles what is inappropriate behavior?
- How to react to inappropriate behavior?
- Support, contact people





Thank you