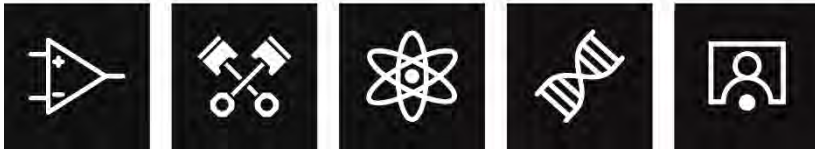


ETH zürich

**BIOMEDICAL
ENGINEERING**



ETH zürich

**Master of Science in
Biomedical Engineering**
Orientation Day

Autumn Semester 2019

DITET

MSc Biomedical Engineering (BME): Who We Are

Administrative part



Christian Frei
Coordinator MSc BME



Reto Kreuzer
Coordinator of studies, D-ITET*

Track Bioelectronics Janos Vörös



Scientific part

Track Bioimaging Klaas Prüssmann



Track Biomechanics Ralph Müller



Track Medical Physics Tony Lomax, Marco Stampanoni



Track Mol. Bioengineering Marcy Zenobi



BEEZ and AMIV

**BEEZ: Biomedical Engineering
Student Association**

Mavi Polatoglu



**AMIV: Student's
Association of D-ITET
and D-MAVT**



Incoming Class

49 students*

**Austria (1), China (2), France (1), Germany (1),
Iceland (1), Italy (3), Romania (1), Spain (2),
Switzerland (32), Turkey (1), UK (1) and USA (3)**

31 ETH Bachelors



* Not all students are matriculated yet

Your Studies are Subject to Regulations

Study regulations (mostly available in German only)

www.rechtssammlung.ethz.ch

(complete collection, German)

www.master-biomed.ethz.ch

> Legal documents (BME 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 (HG F 22.3) or the D-ITET Department Secretariat (ETZ H 85) for help on regulations.

ETH Eidgenössische Technische Hochschule Zürich Swiss Federal Institute of Technology Zurich	RSETHZ 324.1.0350.52
Studienreglement 2013 für den Master-Studiengang Biomedical Engineering	
Departemente	
Informationstechnologie und Elektrotechnik⁽¹⁾ (D-ITET)	
Maschinenbau und Verfahrenstechnik (D-MAVT)	
Physik (D-PHYS)	
Gesundheitswissenschaften und Technologie (D-HEST)	
vom 14. Mai 2013	
	Artikel
1. Kapitel: Allgemeine Bestimmungen	1 – 10
2. Kapitel: Inhalt, Umfang und Struktur des Master-Studiengangs	11 – 21
3. Kapitel: Zulassung zum Master-Studiengang	22 – 23
4. Kapitel: Leistungskontrollen	24 – 32
5. Kapitel: Erteilung des Master-Diploms	33 – 37
6. Kapitel: Schlussbestimmungen	38 – 41
Anhang	
Ausgabe: 14.05.2013 – 0	

Reminder: Student Online Portal



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 a [study plan/learning agreement](#) (until the end of the 4th week)
- Enroll for exams – please enroll during the 3rd and 4th week of the semester (withdrawal possible until very late)

Notify us of your address changes

Read your e-mails!

Login

You must select the language before logging in.
Die Sprachauswahl kann nur vor dem Login erfolgen.

Use your ETH Zurich account (nethz).

Start

How to Choose / Enroll for Lectures?

Consult your track advisor!

Overview of lectures to choose from:

<http://www.master-biomed.ethz.ch/education>

Course catalogue:

www.vvz.ethz.ch > Level: Master's Degree
Programme > Department: ITET > Programme:
Biomedical Engineering Master

Enrollment through the online-portal:

www.mystudies.ethz.ch

MSc in Biomedical Engineering "Bioelectronics Track" last update: June 27, 2019

Autumn semester 2019

Track Core Courses (Yellow) Recommended Elective Courses (Orange) Biology Courses (Green)

Time	Monday	Tuesday	Wednesday	Thursday	Friday
08:00		Physiology and Anatomy (Biomedical Engineers I)	Rehabilitation Engineering II		
09:00			Biomedical Engineering	Intro. to Neuroinformatics	Bio-computable Materials
10:00	Frontiers in Nano-technology	Cross-Disciplinary Research & Development		Micro-robotics	Signal Analysis, Models, and Machine Learning
11:00				Nano-systems	Robotics and Biosensors
12:00		Biomedical Engineering		Cell and Molecular Biology (Engineers I)	Analog Integrated Circuits
13:00	Neuro-morphic Engineering I	Biomedical Imaging		Image Analysis and Computer Vision	Energy Conversion and Transport in Biosystems
14:00		Biomedical Imaging	Micro-scale Acousto-fluidics		Physics in Medical Research: From Atoms to Cells
15:00			Biological Engineering and Bio-technology	Micro-Nano-technology Microfluidics for Biomedical Applications	Frontiers in Nano-technology
16:00	Micro-robotics	Bio-microfluidic Engineering		Biological Methods (Engineers Basic Lab)	Analog Integ. Circuits
17:00		Micro-systems I Process Technology and Integration			Energy Conv. and Transport Biology
18:00					

Spring semester 2019

Time	Monday	Tuesday	Wednesday	Thursday	Friday
08:00		Physiology Anatomy for Biomedical Engineers II	Rehabilitation Engineer. I		Rehabilitation Engineering I
09:00			Optics and Photonics		Principles in Tissue Engineering
10:00	Elements of Microscopy	Biomedical Photonics	Nano-robotics	Quantitative Rig Imaging: From Images to Statistics	Physics Against Cancer: The Physics of Imaging
11:00				Development strategies Medical Implants	Advanced Topics in Control
12:00				Measuring on the Nanometer Scale	
13:00				Cell and Molecular Biology for Engineers II	
14:00	Orthopaedic Bio-mechanics	Computer Simulations of Sensory Systems	Micro-systems II		Physics in Medical Research: From Humans to Cells
15:00		Lasers in Medicine (not offered in 2019)	Neuro-morphic Engineering II		
16:00		Advanced Topics in Control		Nano-robotics	
17:00			Finite Element Analysis in Biomedical Engineer.		
18:00					

June 2019: Biological Methods for Engineers (Advanced Lab) 227-0649-10L

Note: This list is an informal help for students. The official courses can be seen on the Course Catalogue of ETH (www.vvz.ethz.ch)

How to Choose / Enroll for Lectures?

All courses you wish to count towards your Master Diploma must be enrolled for (both the course and the exam)

Only courses agreed upon with the track advisor will count

In particular, do not forget to enroll for the Semester Project and the Master Project

Credits ECTS to Fulfill the MSc BME

Currently: 90 ECTS

Track Courses	50 CP
- Track Core Courses, at least 12 CP	
- Recommended Elective Courses	
- Biology Courses	
Semester Project	8 CP 12 CP
Master Project	30 CP
Humanities (GESS/SIP)	2 CP
Total	90 CP

Starting 2020: 120 ECTS

*You have the option to do this**

Track Courses	52 to 76 CP
- Track Core Courses, at least 12 CP	
- Recommended Elective Courses	
- Biology Courses	
Semester Project	12 CP
Option: 2 nd Semester Project	12 CP
Option: Internship at Industry	12 CP
Option: Research Project	24 CP
Option: D-HEST Research Projects	5 to 15 CP
Master Project	30 CP
Humanities (GESS/SIP)	2 CP
Total	120 CP

**: Your decision by the end of the spring semester 2020*

Learning Agreement / Individual Study Plan

Contains all core courses,
recommended elective courses and
biology courses

Track Medical Physics: Select Tutor

All other tracks: the track advisor is
preselected as the tutor

myStudies: called “Learning Agreement”

Discuss your choice with the track
advisor, edit and submit the list in
myStudies by the end of the fourth
week of the semester

Track advisors can allow courses not
pre-defined for a particular track

Only these courses can be accounted
for the final degree



The screenshot shows the myStudies interface for a student in the Electrical Engineering + Information Technology MSc program. The page is titled 'Matriculation' and displays the student's current semester as Spring Semester 2016. A 'Select Tutor' button is highlighted with a red box. Below this, there are several menu items for course registration, projects, examinations, transcripts, learning agreements, studies overview, and degree requests. At the bottom, there is a 'Contact' section with information about the Registrar's Office and the Study Administration Office.

90 Credits ECTS to Fulfill the MSc BME

Track Courses 50 CP

- Track Core Courses, at least 12 CP
- Recommended Elective Courses
- Biology Courses

Semester Project 8 CP

Master Project 30 CP

Humanities (GESS/SIP) 2 CP

Total 90 CP

Semester Project: 14 week 50% or 7 weeks 100%

Master Project: 6 months 100%

Register with *myStudies*

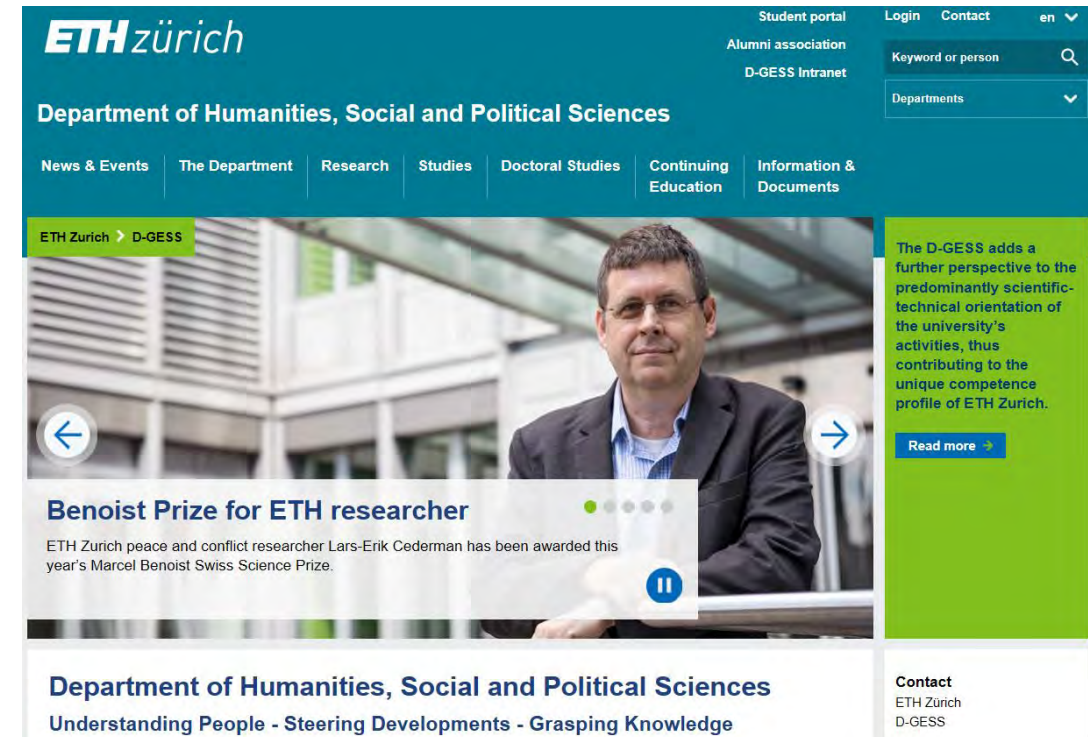
Projects must be supervised by a professor affiliated with one of the 4 participating departments: D-ITET, D-HEST, D-MAVT or D-PHYS

No need to submit a written document/project plan to D-ITET

Not part of the learning agreement

90 Credits ECTS to Fulfill the MSc BME

Track Courses	50 CP
- Track Core Courses, at least 12 CP	
- Recommended Elective Courses	
- Biology Courses	
Semester Project	8 CP
Master Project	30 CP
Humanities (GESS/SIP)	2 CP
Total	90 CP



The screenshot shows the website for the Department of Humanities, Social and Political Sciences (D-GESS) at ETH Zurich. The header includes the ETH Zurich logo, navigation links for Student portal, Alumni association, and D-GESS Intranet, and a search bar. The main content area features a large photo of a researcher, Lars-Erik Cederman, and a news item titled "Benoist Prize for ETH researcher". The footer contains the department's name and contact information.

The GESS/SIP "Compulsory Elective" courses are mandatory for all students at ETH

For language courses, special rules apply (see [directives collection](#))

GESS courses are selected and offered by the Department of Humanities, Social and Political Sciences (D-GESS)

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

On the web: www.gess.ethz.ch



Questions?

Come to us

This presentation can be downloaded from
our website

<http://www.master-biomed.ethz.ch/>

The screenshot shows the website for the Masters in Biomedical Engineering at ETH Zurich. The header is blue with the ETH Zurich logo and navigation links for 'Student portal', 'Alumni association', 'Login', 'Contact', and 'en'. Below the header, there is a search bar and a 'Departments' dropdown menu. The main navigation bar includes 'Education', 'Research', 'Admission', 'People', 'Documents', 'News & Events', and 'Links'. The main content area features a green banner with the text 'ETH Zurich > D-ITET > Masters in Biomedical Engineering'. Below this is a large image of a biological tissue section. A white box with the title 'Biomechanics' and the subtitle 'Research at Institute for Biomechanics IFB' is overlaid on the image. To the right of the image, there is a green sidebar with text describing Biomedical Engineering as an exciting and growing field at the interfaces of engineering, biology, and medicine, with the goal of solving human health problems.



Contacts / Information for Students of the MSc Biomedical Engineering

September 16, 2019

Reto Kreuzer

Coordinator of Studies, Department of Information Technology and Electrical Engineering (D-ITET)

Agenda

- 1. Your new department**
- 2. Where to find the right contact**
- 3. Useful information**

The D-ITET: Optimal support for 1400 students

- 36 professors and professors
- over 50 other lecturers
- 400 doctoral students
- study administration
- AMIV/BEEZ (students' association)
- IT support

Students at ETHZ and D-ITET (2018 figures)

Students at ETH	21'397
Students at D-ITET	1'808
Students at bachelor level (years 1 to 3)	
ETH	9'517
D-ITET	704
Students at master level (years 4 to 5)	
ETH	6'590
D-ITET	668
Electrical Engineering MSc	400
Biomedical Engineering MSc (with D-HEST, D-MAVT and D-PHYS)	105
Energy Science & Technology MSc (with D-MAVT and D-MTEC)	107
Quantum Engineering (with D-PHYS, first year fall 2019)	24
Neural Systems and Computation MSc (with University Zurich)	56
Exchange students	
ETH	480
D-ITET	39
PhD students	
ETH	4'175
D-ITET	397

Our Professors: one fourth in the biomedical field



Prof. Luca Benini



Prof. Jürgen Biela



Prof. Helmut Bölskei



Prof. Colombo Bolognesi



Prof. Gian-Luca Bona



Prof. Florian Dörfler



Prof. Christian M. Franck



Prof. Orçun Göksele



Prof. Benjamin Grewe



Prof. Ulrike Grossner



Prof. Richard Hahnloser



Prof. Qiuting Huang



Prof. Gabriela Hug



Prof. Taekwang Jang



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. Daniel Razansky



Prof. Marco Stampanoni



Prof. Klaas Enno Stephan



Prof. Lothar Thiele



Prof. Luc Van Gool



Prof. Laurent Vanbever



Prof. János Vörös



Prof. Roger P. Wattenhofer



Prof. Armin Wittneben



Prof. Vanessa C. Wood

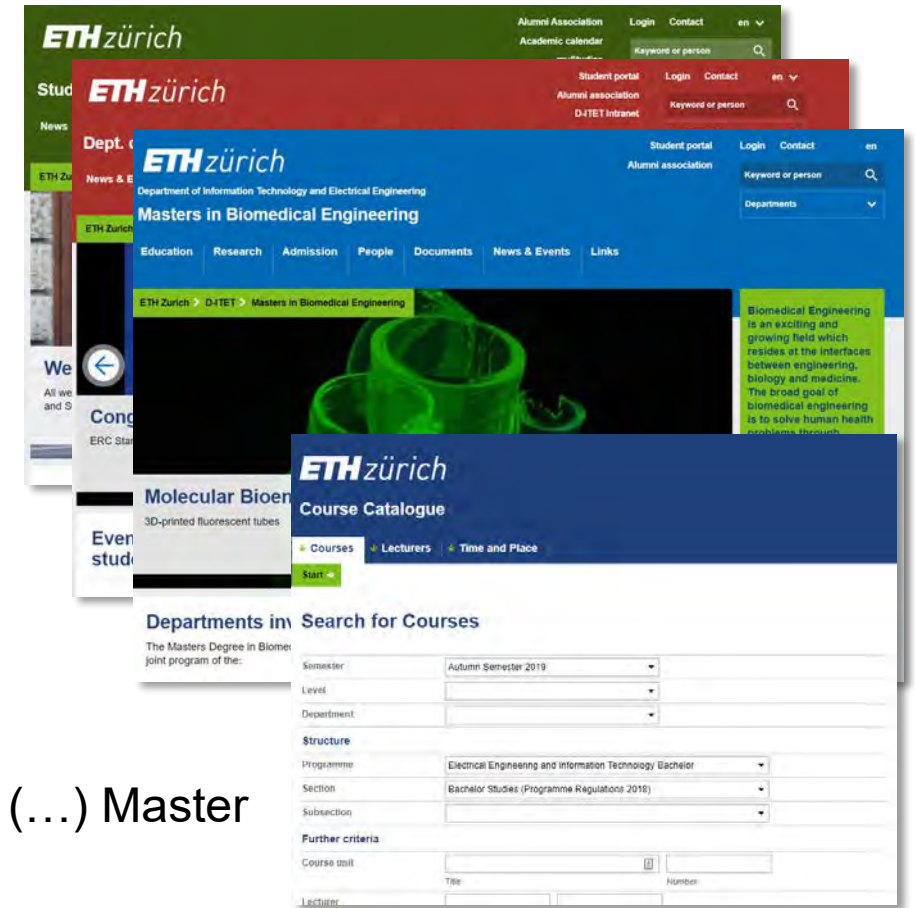


Prof. Mehmet Fatih Yanik

Where to find the right contact

Where do I find information on the web?

- General Information on studies at ETH and D-ITET**
 ETH students' website: www.ethz.ch/students
 D-ITET website www.ee.ethz.ch/studies
- Information on the Master in Biomedical Engineering**
 Program website: www.master-biomed.ethz.ch
- Course catalogue**
 Online: www.vvz.ethz.ch > Programme > Electrical Engineering (...) Master
- Messages from ETH and the Department**
 Email on your ETH-Address (username@student.ethz.ch)
 → **check your mailbox regularly and read the messages carefully!**



Your most important contacts at ETH and the D-ITET

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

Your contacts at the D-ITET



Reto Kreuzer

Coordinator of studies,
Student advisor

*Head of student
administration D-ITET,
Regulations / legal etc.*

ETZ H 83
+41 44 632 50 03
info@ee.ethz.ch



Doris Döbeli

Student Administration

*Transcripts of records,
diplomas etc.*

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



Noémie Frischknecht

Study Coordination

Course schedules

ETZ H 87
+41 44 632 50 03
info@ee.ethz.ch

$L(\pi)$ -act, $E[\log(X_s^{t,n})] = \sup_{P_t} E[\log(X)]$

$X \in C_s \wedge n$

$X_s^{t,n} = \arg \sup_{X \in C_{s,n}} E[\log(X)]$

$X \in C_{s,n}$

Komlos applied to $(t, \omega) \rightarrow X_s^{t,n}(\omega)$

yields a subsequence (t_k) such that $X_s^{t_k, n}(\omega) \rightarrow Y_s^t(\omega)$

$Y_s^t(\omega) = X_s^t(\omega)$

$0 \Rightarrow \int_{\mathbb{R}_+} \lim_{n \rightarrow \infty} \dots$

$T=3$

10

$\frac{(T+1)/T}{(T+2)/T}$

$\frac{2}{T}$

$\frac{1}{T+2}$

Amman

Useful information

Counselling at ETH and the D-ITET

- **Course selection:** your track advisor.
- **Studies at D-ITET:** As the student advisor of D-ITET, I offer counselling on issues directly related to your studies (e.g. deadlines, failures at examinations, etc.).
- **General questions regarding your arrival at ETH:** Ms. Annina Wanner (HG F 22.3) of the [international student support](#) helps with possible issues related to your status as foreign student.
- **Time management / motivation:** The team of the ETH [student advisory service / coaching](#) of the Student Services (StS) helps you.
- **Difficult phases / personal problems:** the [psychological counselling service](#) (free of charge and confidential).

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 September 30), laptops may be purchased through ETH (see www.projektneptun.ch).
- **IDES:** ETH also offers software at very low cost, some products even for free (see <http://idesnx.ethz.ch>). Remember: the use of non-licensed software is forbidden and subject to criminal prosecution!

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 > Current Documents

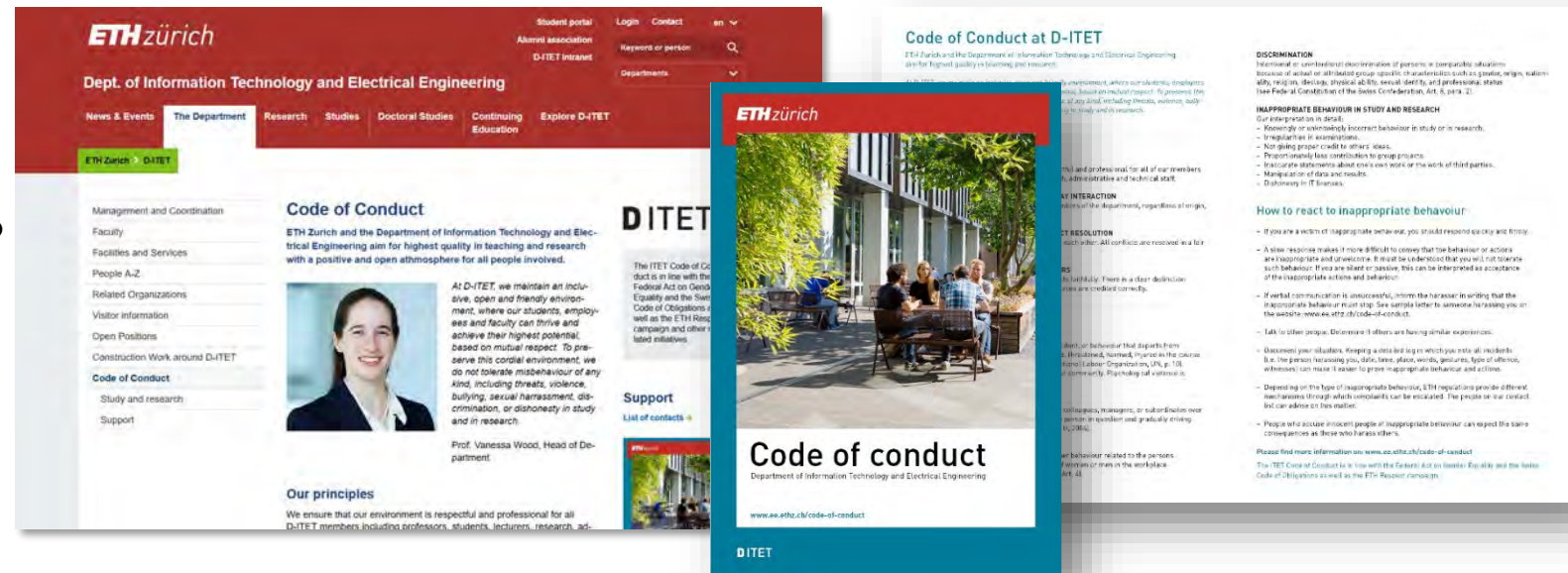
Code of conduct

« 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



Enjoy your studies at ETH!



Zürich



Welcome Day

Offers and Activities: Study Documents

- Study documents online on the AMIV website



Events



Sport and Fun

- Theater
- Poker- / Jass tournament
- Sushi-Night
- Chocolate fondue
- Strongmanrun
- Wellness-Evening
- Lasertag
- Beachvolleyball tournament



Events

- Hertz
- Absolventenparty
- AMIV goes Nachtseminar
- And much more 😊



- Skiweekend
- AMIV Fondue (with professors)
- Wine degustation
- Beer degustation





Offers and Activities: Lounge




- Couches
- 55" TV with:
 - Xbox One and 360
 - PS4
 - Nintendo Wii

- Coffee machine
- Beer vending machine
- Table football
- Billiard table



How can I participate?

- Become a VSETH member:

Voluntary contributions  for the Autumn Semester 2019

Note: If membership is selected, the personal and address data required for member administration and other club activities will be forwarded to the respective club.

	Yes	No
Solidarity fund for foreign students (CHF 5.-)	<input checked="" type="radio"/>	<input type="radio"/>
SOSETH membership (CHF 5.-)	<input checked="" type="radio"/>	<input type="radio"/>
VSETH membership (CHF 10.-; for doctoral students CHF 35.-)	<input checked="" type="radio"/>	<input type="radio"/>

Save

- Teams
- Board member

Where can you find us?



www.amiv.ch



@amiv_eth



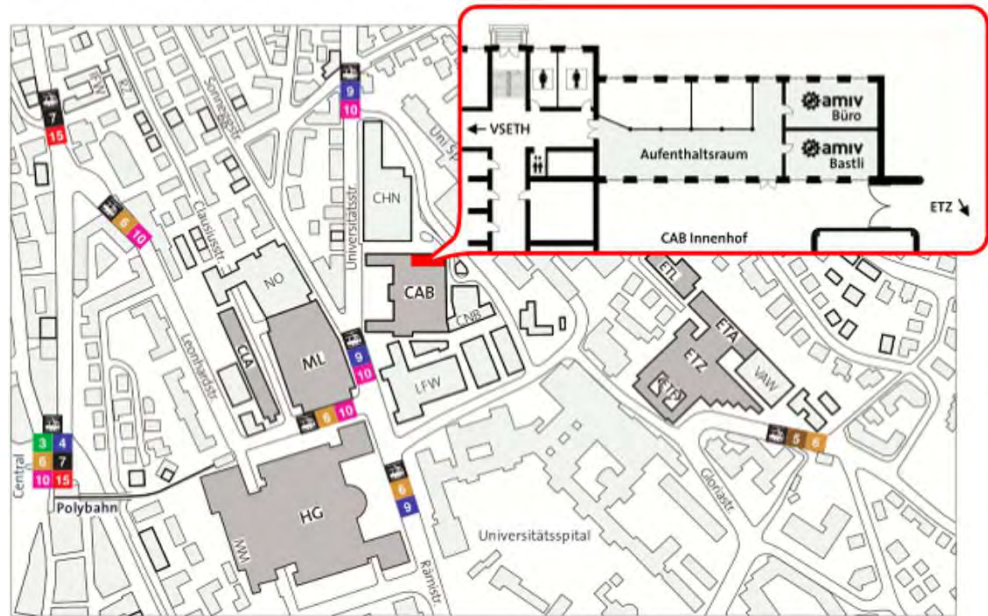
facebook.com/AMIV.ETHZ



info@amiv.ethz.ch



CAB E37
Universitätstrasse 6
8092 Zürich



Questions?





amiv an der ETH

Universitätstrasse 6
CH-8092 Zürich

www.amiv.ch
info@amiv.ethz.ch



LIMES

Ladies In Mechanical and Electrical Studies



What we do:

Ladies Night:

Dinner and networking with industry partner

Highschool students day:

Information day for students to inspire them for our field

Further activities:

- Coaching events
- Excursions
- Sport events



Welcome-Apero for all women

Tuesday 17.9 12.00 p.m. ETZ Foyer





LIMES

Ladies In Mechanical and Electrical Studies



limes@amiv.ethz.ch



www.amiv.ethz.ch/limes



<https://www.facebook.com/LIMES.AMIV>