

**ETH** zürich

**Master in Biomedical  
Engineering**  
Orientation Day

Autumn Semester 2018

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**



Tobias Hagen



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





## Incoming Class

43 students\*

Canada (3), China (1), Denmark (1), France (1),  
Germany (5), Italy (2), Portugal (1), Qatar (1),  
Spain (1), Switzerland (20), Turkey (2), UK (3)  
and USA (2)

16 ETH Bachelors

\* Not all students are immatriculated yet



## Your Studies are Subject to Regulations

Study regulations (mostly available in German only)

[www.rechtssammlung.ethz.ch](http://www.rechtssammlung.ethz.ch)

(complete collection, German)

[www.master-biomed.ethz.ch](http://www.master-biomed.ethz.ch)

> Legal documents (BME regulations in English)

Rector's Directives (some available in German only)

[www.ethz.ch/students](http://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.

The image shows the cover page of the 'Studienreglement 2013 für den Master-Studiengang Biomedical Engineering'. It includes the ETH logo, the university name in German and English, the document number RSETHZ 324.1.0350.52, and the title. Below the title, it lists the departments involved: Informationstechnologie und Elektrotechnik (D-ITET), Maschinenbau und Verfahrenstechnik (D-MAVT), Physik (D-PHYS), and Gesundheitswissenschaften und Technologie (D-HEST). The date is 'vom 14. Mai 2013'. A table of contents follows, listing chapters from 'Allgemeine Bestimmungen' to 'Schlussbestimmungen' with their respective article ranges. The page also includes the date of publication 'Ausgabe: 14.05.2013 - 0'.

		<b>Artikel</b>
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](http://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 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!**

#### 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](http://www.vvz.ethz.ch) > Level: Master's Degree  
Programme > Department: ITET >  
Programme: Biomedical Engineering Master

Enrollment through the online-portal:

[www.mystudies.ethz.ch](http://www.mystudies.ethz.ch)

MSc in Biomedical Engineering Autumn semester 2018		"Biomechanics Track"					Track Core Courses			Recommended Elective Courses			Biology Courses		Last update: Sept. 13, 2018		
Time	Monday	Tuesday	Wednesday	Thursday	Friday	Monday	Tuesday	Wednesday	Thursday	Friday	Monday	Tuesday	Wednesday	Thursday	Friday	Monday	Tuesday
08:00																	
09:00	Micro and Nano-Tomography Biological Tissues	Physiology & Anatomy for Biomedical Engineers I	Rehabilitation Engineering II	Application MATI, AD in the Human Movement Sciences	Biomechanical Engineering												
10:00	Frontiers in Nano-technology	Biostatistics															
11:00																	
12:00																	
13:00																	
14:00	Biomedical Imaging	Biomedical Imaging															
15:00																	
16:00	Biomechanics of Sport Injuries and Rehabilitation	Biostatistics															
17:00																	
18:00																	
<b>Spring semester 2018</b>																	
Time	Monday	Tuesday	Wednesday	Thursday	Friday	Monday	Tuesday	Wednesday	Thursday	Friday	Monday	Tuesday	Wednesday	Thursday	Friday	Monday	Tuesday
08:00																	
09:00		Rehabilitation Engineering I: Motor Functions	Physiology and Anatomy for Biomedical Engineers II	Appropriate Health System Design	Colloquium in Biomechanics												
10:00																	
11:00		Clinical Challenges Musculo-skeletal Disorders	Nanorobotics	Bone Biology and Consequences for Human Health													
12:00																	
13:00																	
14:00	Orthopaedic Biomechanics	Computer Simulations of Sensory Systems															
15:00																	
16:00																	
17:00																	
18:00																	
June 2018: <b>Biological Methods for Engineers</b> 227-0949-10L June 2018: Sports Biomechanics 316-1168-00L Note: This list is an informal help for students. The official courses can be seen on the Course Catalogue of ETH ( <a href="http://www.vvz.ethz.ch">www.vvz.ethz.ch</a> )																	

## 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's Thesis.**



## 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's Thesis** **30 CP**

**Humanities (GESS/SIP)** **2 CP**

**Total** **90 CP**

The screenshot shows the ETH Zurich website for the Masters in Biomedical Engineering program. The header includes the ETH Zurich logo, the department name (Department of Information Technology and Electrical Engineering), and the program title (Masters in Biomedical Engineering). Navigation tabs include Education, Research, Admission, People, Documents, News & Events, and Links. A breadcrumb trail shows the path: ETH Zurich > D-ITET > Masters in Biomedical Engineering. The main content area is titled 'Bioelectronics' and provides a detailed description of the track, which focuses on the development and use of instruments and signal processing theory. It also lists the advisor for the track, Prof. Dr. Janos Vörös, and provides contact information including phone numbers and an email address.

**ETH zürich** Student portal  
Alumni association

Department of Information Technology and Electrical Engineering

### Masters in Biomedical Engineering

Education | Research | Admission | People | Documents | News & Events | Links

ETH Zurich > D-ITET > Masters in Biomedical Engineering

#### Bioelectronics

- Biomechanics
- Bioimaging
- Medical Physics
- Molecular Bioengineering
- Requirements
- Individual Study Plan
- Semester Project
- Master Project
- GESS Courses

#### Bioelectronics

The track **Bioelectronics** provides in-depth knowledge of the development and use of instruments and signal processing theory to measure physical, physiologic or biologic signals in humans and other living organisms. The development of instrumentation is based on technologies including bio-MEMS, micro- and nanosystems, biophotonics, sensors, optics and microfluidics. These technologies are applied to a wide array of instruments and devices including hearing aids, biosensors, labs-on-a-chip, and electrograms.

#### Advisor Track Bioelectronics

ETH Zurich  
Inst. f. Biomedizinische Technik

Prof. Dr. Janos Vörös  
Deputy head of Institute for Biomedical Engineering  
ETZ F 82  
Gloriastrasse 35  
8092 Zürich  
Switzerland

+41 44 632 59 03 →  
+41 44 632 11 93 →  
janos.voros@biomed.ee.ethz.ch →

## 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's Thesis** **30 CP**

**Humanities (GESS/SIP)** **2 CP**

**Total** **90 CP**

**Biology courses only for students that do not have prior knowledge in these topics**

- Biological methods
- Cell & molecular biology
- Physiology & anatomy

## Learning Agreement / Individual Study Plan

Contains all core courses,  
recommended elective courses and  
biology courses

Track Medical Physics: Select Tutor

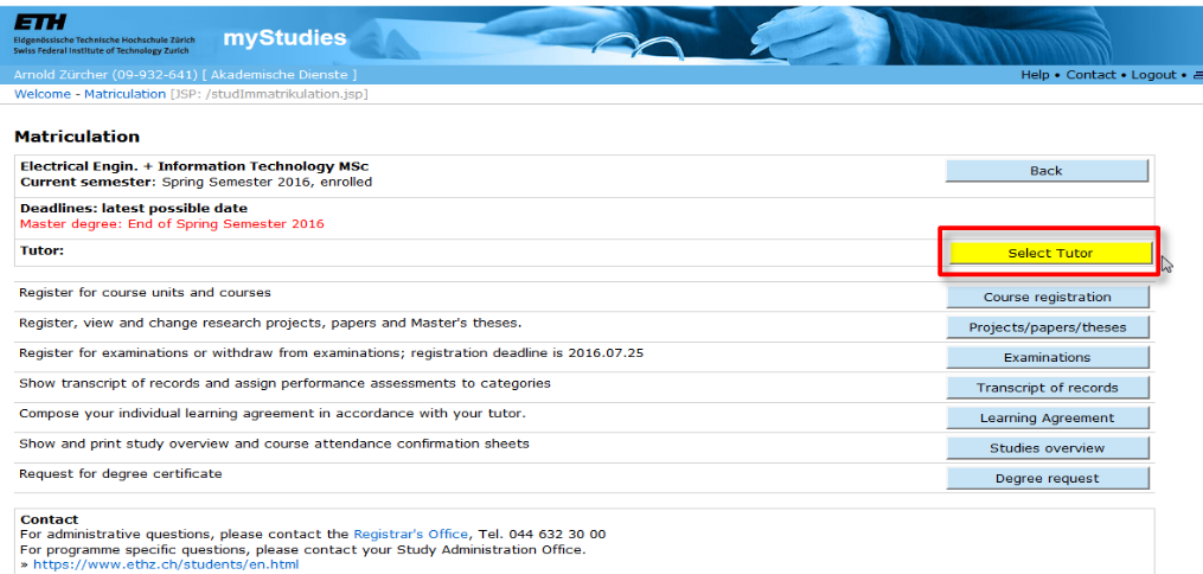
All other tracks: the track advisor is  
preselected as the tutor

*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 website interface. At the top, there is a blue header with the ETH logo and the text "myStudies". Below the header, there is a navigation bar with the text "Arnold Zürcher (09-932-641) [ Akademische Dienste ]" and "Welcome - Matriculation [ISP: /studimmatrikulation.jsp]". The main content area is titled "Matriculation" and contains a table with the following information:

Electrical Engin. + Information Technology MSc Current semester: Spring Semester 2016, enrolled	Back
Deadlines: latest possible date Master degree: End of Spring Semester 2016	
Tutor:	Select Tutor
Register for course units and courses	Course registration
Register, view and change research projects, papers and Master's theses.	Projects/papers/theses
Register for examinations or withdraw from examinations; registration deadline is 2016.07.25	Examinations
Show transcript of records and assign performance assessments to categories	Transcript of records
Compose your individual learning agreement in accordance with your tutor.	Learning Agreement
Show and print study overview and course attendance confirmation sheets	Studies overview
Request for degree certificate	Degree request

Below the table, there is a "Contact" section with the text: "For administrative questions, please contact the Registrar's Office, Tel. 044 632 30 00. For programme specific questions, please contact your Study Administration Office. > <https://www.ethz.ch/students/en.html>"

## 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's Thesis** 30 CP

**Humanities (GESS/SIP)** 2 CP

**Total** 90 CP

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

**Master's 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

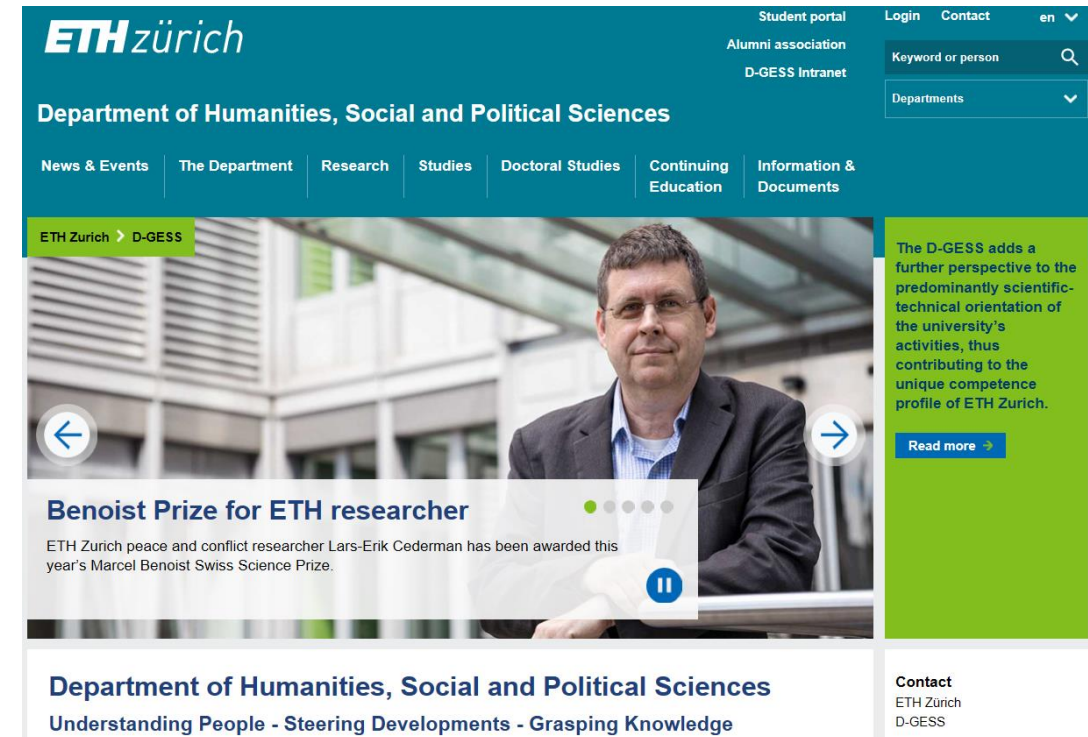
- Track Core Courses, at least 12 CP
- Recommended Elective Courses
- Biology Courses

Semester Project 8 CP

Master's Thesis 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 Zürich. The header includes the ETH Zürich logo, navigation links for Student portal, Alumni association, and D-GESS Intranet, and a search bar. The main navigation menu includes News & Events, The Department, Research, Studies, Doctoral Studies, Continuing Education, and Information & Documents. The main content area features a large photo of a researcher, a news item titled "Benoist Prize for ETH researcher" with a play button, and a sidebar with a "Read more" link. The footer contains the department 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](mailto:viola.gloor@gess.ethz.ch)

On the web: [www.gess.ethz.ch](http://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 dropdown menu for 'Departments'. 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 over the image contains the text 'Biomechanics' and 'Research at Institute for Biomechanics IFB'. A green sidebar on the right contains the text: 'Biomedical Engineering is an exciting and growing field which resides at the interfaces between engineering, biology and medicine. The broad goal of biomedical engineering is to solve human health problems through advances in diagnosis, treatment and/or prevention of human disease.'