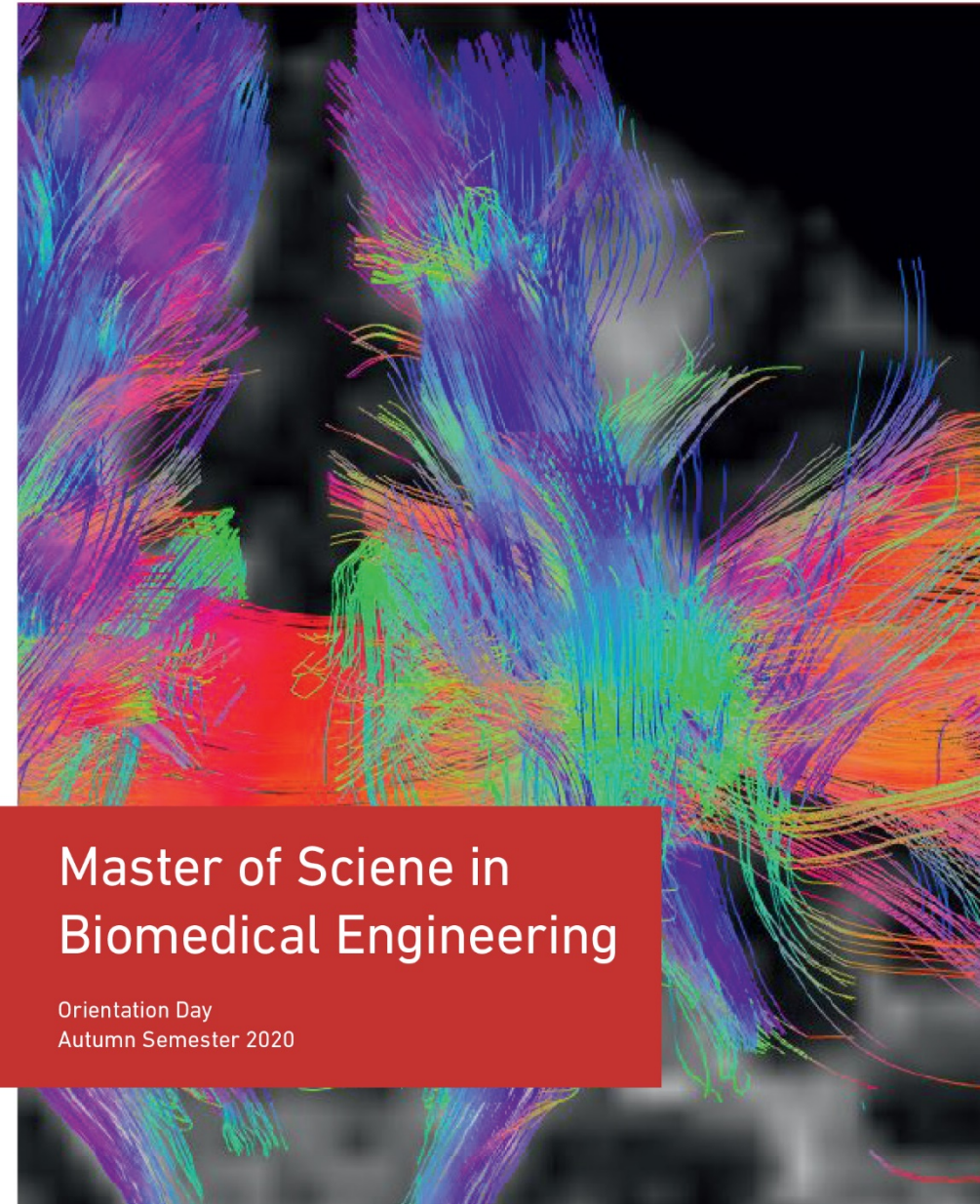


**ETH** zürich

**BIOMEDICAL  
ENGINEERING**



**Master of Science in  
Biomedical Engineering**

Orientation Day  
Autumn Semester 2020

# 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**



**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**

**Walter Bernardi**



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



## Incoming Class

**67 students\***

**Brazil (1), Canada (2), China (3), France (1),  
Germany (2), India (1), Italy (4), Netherlands (1),  
Russia (1), Singapore (2), Spain (3), Sweden (1),  
Switzerland (32), Thailand (1), Turkey (1), UK (5)  
and USA (6)**

**28 ETH Bachelors**



\* Not all students are fully enrolled 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

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.

<b>ETH</b> Eidgenössische Technische Hochschule Zürich Swiss Federal Institute of Technology Zurich	RSETHZ 324.1.0350.53
<b>Studienreglement 2020</b> für den Master-Studiengang Biomedical Engineering	
Departemente Informationstechnologie und Elektrotechnik <sup>1</sup> (D-ITET) Maschinenbau und Verfahrenstechnik (D-MAVT) Gesundheitswissenschaften und Technologie (D-HEST) Physik (D-PHYS)	
vom 29. Oktober 2019	
	<b>Artikel</b>
1. Kapitel: Allgemeine Bestimmungen	1 – 9
2. Kapitel: Inhalt, Umfang und Struktur des Studiengangs	10 – 22
3. Kapitel: Zulassung zum Studiengang	23 – 24
4. Kapitel: Leistungskontrollen	25 – 35
5. Kapitel: Erteilung des Master-Diploms	36 – 40
6. Kapitel: Schlussbestimmungen	41 – 44
Anhang	
Ausgabe: 29.10.2019 – 0	
<small><sup>1</sup> Federführendes Departement nach Massgabe von Art. 33 Abs. 1 der Organisationsverordnung ETH Zürich vom 16.12.2003 (RSETHZ 201.021).</small>	
1	

## 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 "Bioelectronics Track" last update: Aug. 5, 2020

Autumn semester 2020

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			Cell Biophysics		
10:00	Frontiers in Nanotechnology	Cross-Disciplinary Research & Development	Biomedical Engineering	Intro to Neuro-informatics	
11:00				Cell Biophysics	Signal Analysis, Models, and Machine Learning (not offered in HS20)
12:00		Biomicrofluidic Engineering		Micro-robotics	Biocompatible Materials
13:00		Biomedical Imaging	Biological Engineering and Bio-technology	Nano-systems	Bioreactors and Biosensors
14:00	Neuro-morphic Engineering I			Micro-systems I: Process Technology and Integration	Analog Integrated Circuits
15:00	Biomedical Imaging		Micro-scale Acousto-fluidics	Biological Methods Engineers (Basic Lab)	Physics in Medical Research: From Atoms to Cells
16:00	Micro-robotics	Bio-microfluidic Engineering	Micro/Nano-technology Microfluidics for Biomedical Applications	Image Analysis and Computer Vision	Frontiers in Nano-technology
17:00		Micro-systems I: Process Technology and Integration			Analog Integ. Circuits
18:00					

Spring semester 2020

Time	Monday	Tuesday	Wednesday	Thursday	Friday
08:00		Physiology and Anatomy for Biomedical Engineers II	Rehabilitation Engineer. I		Rehabilitation Eng. I
09:00	Neural Systems	Biomedical Photonics (not offered in 2020)	Translational Neuro-modelling	Quantitative Big Imaging: From Images to Statistics	Principles in Tissue Engineering
10:00		Nano-robotics	Optics and Photonics	Development strategies Medical Implants	Physics Against Cancer: The Physics of Imaging
11:00				Messuring on the Nanometer Scale	Advanced Topics in Control
12:00					Biomechanics
13:00	Finite Element Analysis Bio-medical Engineer.	Micro-systems II	Intro. to Machine Learning	Cell and Molecular Biology for Engineers II	Physics in Medical Research: From Humans to Cells
14:00	Computer Simulations of Sensory Systems	Lasers in Medicine	Neuro-morphic Engineering II	Nano-robotics	Chemistry of Devices and Technologies
15:00	Orthopedic Biomech.				Translational Neuro-modelling
16:00		Advanced Topics in Control			
17:00					
18:00					

June 2020 Biological Methods for Engineers (Advanced Lab) 227-0949-10L Note: This list is an informal help for students. The official courses can be seen on the Course Catalogue of ETH (www.vzz.ethz.ch)

## 120 Credits ECTS to Fulfill the MSc BME

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

Part of the learning agreement (next slide)

\*: mandatory



## 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 'Matriculation' section is active, displaying the current semester as Spring Semester 2016. A red box highlights the 'Select Tutor' button, which is currently highlighted in yellow. Other buttons visible include 'Back', 'Course registration', 'Projects/papers/theses', 'Examinations', 'Transcript of records', 'Learning Agreement', 'Studies overview', and 'Degree request'. The 'Contact' section at the bottom provides information for administrative and program-specific inquiries.

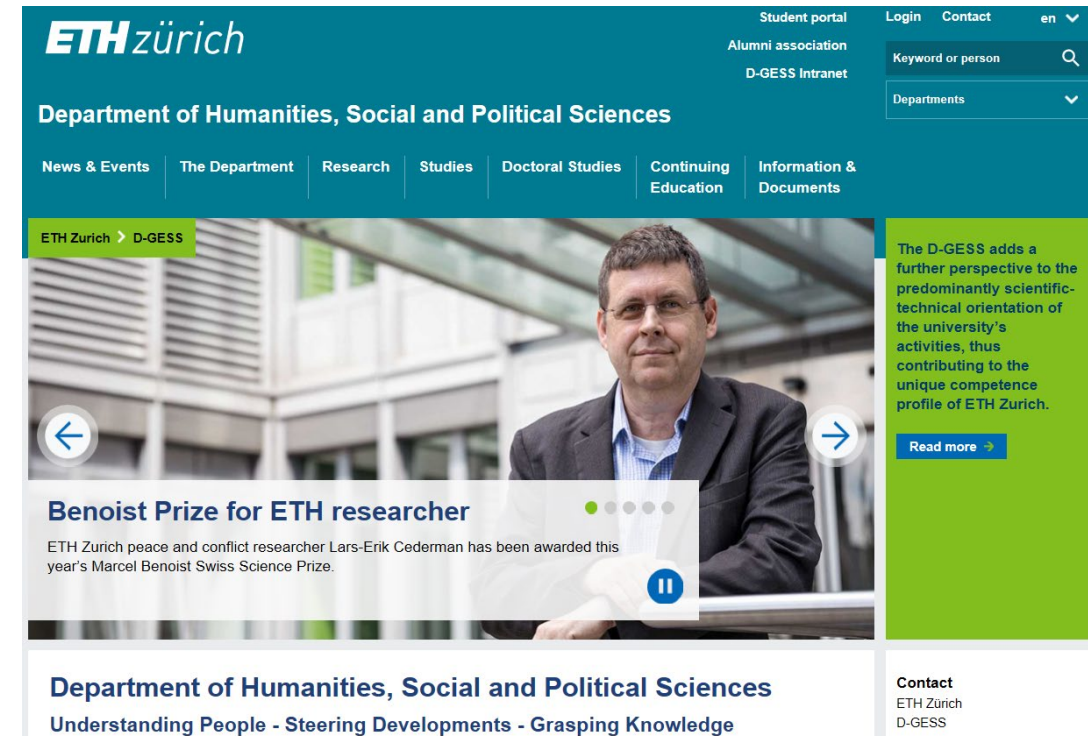
## 120 Credits ECTS to Fulfill the MSc BME

Track Courses *	52 to 76 CP	Semester Project: 14 week 50% or 7 weeks 100%
- Track Core Courses, at least 12 CP		Master Project: 6 months 100%
- Recommended Elective Courses		Register with <i>myStudies</i>
- Biology Courses		
Semester Project *	12 CP	Projects must be supervised by a professor affiliated with one of the 4 participating departments: D-ITET, D-HEST, D-MAVT or D-PHYS
Option: 2 <sup>nd</sup> 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	No need to submit a written document/project plan to D-ITET
Humanities (GESS/SIP) *	2 CP	
Total	120 CP	Not part of the learning agreement

\*: mandatory

## 120 Credits ECTS to Fulfill the MSc BME

Track Courses *	52 to 76 CP
- Track Core Courses, at least 12 CP	
- Recommended Elective Courses	
- Biology Courses	
Semester Project *	12 CP
Option: 2 <sup>nd</sup> 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
<b>Humanities (GESS/SIP) *</b>	2 CP
Total	120 CP



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, Malte Bachem,  
[malte.bachem@gess.ethz.ch](mailto:malte.bachem@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 language (en). Below the header 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."