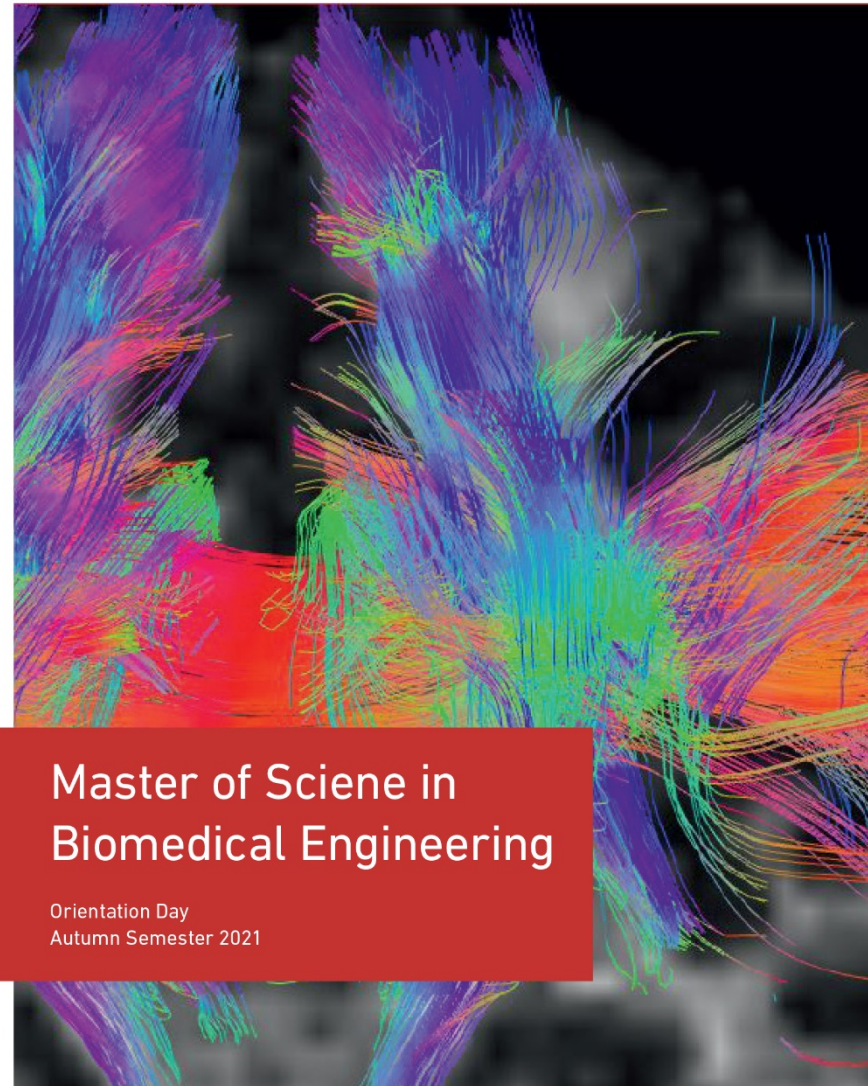


**ETH** zürich

**BIOMEDICAL  
ENGINEERING**



Master of Science in  
Biomedical Engineering

Orientation Day  
Autumn Semester 2021

# 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**

**Adrian Bertagnoli**



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



## Incoming Class

**77 students\***

**Australia (1), Canada (1), Chile (1), China (3),  
France (1), Germany (2), India (1), Ireland (1),  
Italy (6), Romania (1), Singapore (2), Spain (8),  
Switzerland (41), UAE (1), UK (3) and USA (4)**

**35 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>	
<b>für den Master-Studiengang Biomedical Engineering</b>	
<b>Departemente</b>	
<b>Informationstechnologie und Elektrotechnik<sup>1</sup> (D-ITET)</b>	
<b>Maschinenbau und Verfahrenstechnik (D-MAVT)</b>	
<b>Gesundheitswissenschaften und Technologie (D-HEST)</b>	
<b>Physik (D-PHYS)</b>	
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: May 25, 2021

Autumn semester 2021 ■ Track Core Courses ■ Recommended Elective Courses ■ Biology Courses

Time	Monday	Tuesday	Wednesday	Thursday	Friday
08:00		Physiology and Anatomy Biomedical Engineers I			
09:00		Rehabilitation Engineering II	Biomedical Engineering	Quibit, Electrons, Photons	Intro to Neuroinformatics
10:00	Frontiers in Nano-technology	Cross-Disciplinary Research & Development	Quibit, Electrons, Photons	Cell Biophysics	Nano-systems
11:00		Biomedical Imaging	Biological Engineering and Bio-technology	Micro-scale Acousto-fluidics	Cell and Molecular Biology Engineers I
12:00				Micro-systems I: Process Technology and Integration	Physical Modelling and Simulation
13:00				Biological Methods Engineers (Basic Lab)	Bio-compatible Materials
14:00	Neuro-morphic Engineering I	Cell Biophysics	MicroNano-technology and Bio-technology	Image Analysis and Computer Vision	Quibit, Electrons, Photons
15:00	Biomedical Imaging	Micro-systems I: Process Technology and Integration		Cell Biophysics	Physics in Medical Research: From Atoms to Cells
16:00	Micro-robotics				Frontiers in Nano-technology
17:00	Biomedical Imaging				Analog Integrated Circuits
18:00					

Spring semester 2021

Time	Monday	Tuesday	Wednesday	Thursday	Friday
08:00		Physiology Anatomy for Biomedical Engineers II			Rehabilitation Engin. I
09:00	Neural Systems	Rehabilitation Engin. I	Optics and Photonics	Quantitative Big Imaging From Images to Statistics	Principles in Tissue Engineering
10:00	Elements of Microscopy	Biomedical Photonics	Trans-lational Neuro-modelling	Chemistry of Devices and Technologies	Biodynamics
11:00		Nano-robotics	Thermal Modelling	Develop-ment strategies Medical Implants	Large-Scale Convex Optimization
12:00		Lasers in Medicine *		Measuring on the Nanometer Scale	Physics Against Cancer: The Physics of Imaging
13:00		Intro. to Machine Learning		Micro-systems II	Advanced Topics in Control
14:00	Finals Element Analysis Biomedical Engineering	Large-Scale Convex Optimization	Neuro-morphic Engineering II	Cell and Molecular Biology for Engineers II	Physics in Medical Research: From Humans to Cells
15:00	Orthopaedic Biomech	Math-Sci Robotics	Intro to Machine Learning	Nano-robotics	Advanced Signal Analysis, Modeling and Machine Learning
16:00	Advanced Topics in Control				
17:00					
18:00					

June 2020: ■ Biological Methods for Engineers (Advanced Lab) 227-0949-10L, various dates: Computational Psychiatry & Computational Psychosomatics

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](http://www.vvz.ethz.ch)) \* not offered in FS21

## 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
Humanities (GESS/SiP) *	2 CP
<hr/> Total	120 CP

\*: mandatory

Sum of mandatory courses: 96 CP

Options: at least 24 CP



## 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	
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<b>Master Project *</b>	<b>30 CP</b>
<b>Humanities (GESS/SiP) *</b>	<b>2 CP</b>
<hr/>	
<b>Total</b>	<b>120 CP</b>

Part of the learning agreement (next slide)

## 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 Engin. + Information Technology MSc' program. The 'Matriculation' section is active, displaying the current semester as 'Spring Semester 2016, enrolled' and the deadline as 'End of Spring Semester 2016'. A 'Select Tutor' button is highlighted with a red box. Other buttons 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 questions.

## 120 Credits ECTS to Fulfill the MSc BME

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- Option: D-HEST Research Projects	5 to 15 CP
Master Project *	30 CP
Humanities (GESS/SiP) *	2 CP
<hr/> Total	<hr/> 120 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

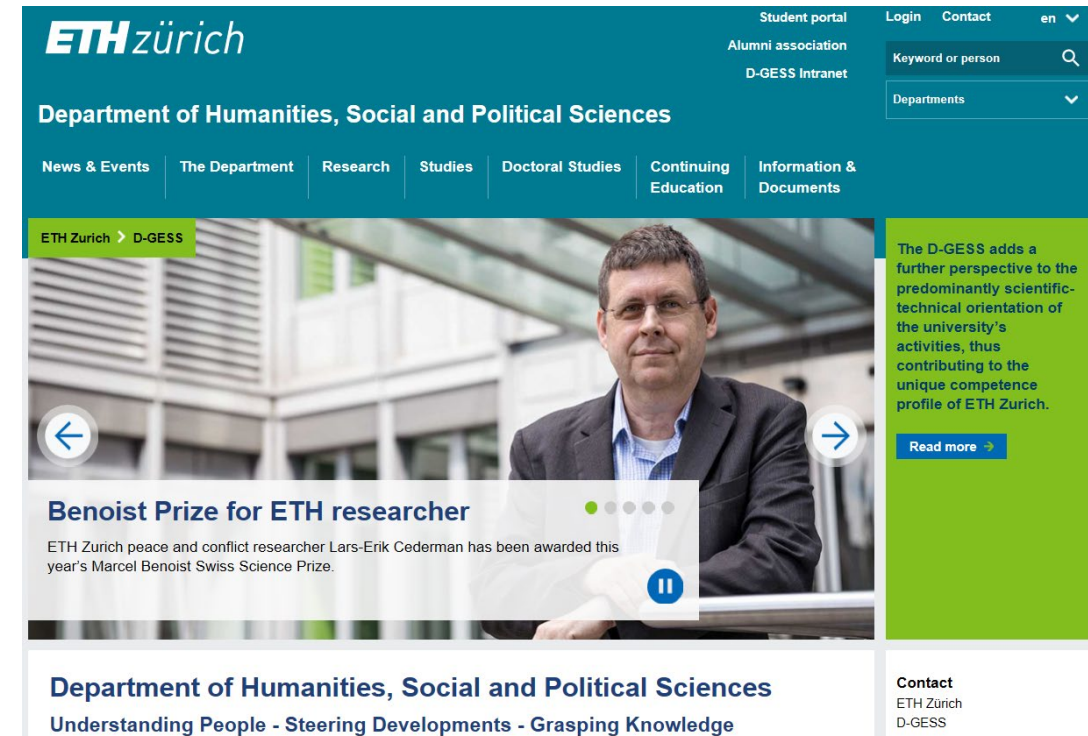
No need to submit a written document/project plan to D-ITET

Not part of the learning agreement

\*: 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
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- 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
<hr/>	
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/>

**ETH zürich**  
Department of Information Technology and Electrical Engineering

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Alumni association

Keyword or person   
Departments

Education Research Admission People Documents News & Events Links

ETH Zurich > D-ITET > Masters in Biomedical Engineering

**Biomechanics**  
Research at Institute for Biomechanics IfB

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.