

Medicine & Engineering

Our strong combination at FAU Erlangen-Nürnberg

Welcome, Master's Students of Medical Engineering!

Master Welcome Day, April 9th 2021
Claudia Barnickel



- ❑ **Welcome by Prof. Björn Eskofier**
(Director of the Medical Engineering program)
- ❑ **Welcome by Dr. Heike Leutheuser**
(Director of the Central Institute of Medical Engineering/ZiMT)
- ❑ **Introduction to the Study Program**
(Claudia Barnickel, Study Advisor & Coordinator for Medical Engineering)
- ❑ **Welcome by FSI Medizintechnik**
(Student Association Medical Engineering/FSI MedTech)

The Diversity of Medical Engineering at FAU



Persons in Charge Contact Persons



Medical Engineering Representatives

**Please note:
All administrative institutions at FAU
are closed to the public at the moment.
Please contact the persons introduced on
the following pages via email if necessary!**

Program Representatives

- **Program Director**

(Machine Learning & Data Analytics Lab)

Prof. Dr. Björn Eskofier



- **Director of ZiMT**

Dr.-Ing. Heike Leutheuser



- **Study Advisor and Coordinator Medical Engineering**

Claudia Barnickel

Currently: consultation only via email or zoom

studienberatung-medizintechnik@fau.de



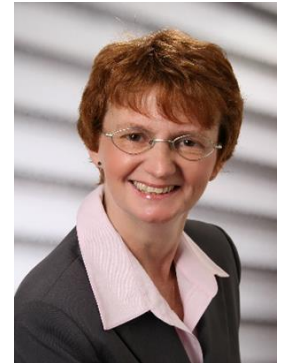
- all kinds of questions regarding your studies
- accreditation of coursework achievements
- support with formalities
- studying abroad (Erasmus+)
- help in situations of crisis

- **Examinations Office Faculty of Engineering**
(Prüfungsamt Technische Fakultät)

Helga Jahreis

helga.jahreis@fau.de

- managing exams, credits, grades online via the Mein Campus portal
- (last-minute withdrawal from exams due to illness or other severe reasons) → **right now, corona regulations apply: students can withdraw by themselves via Mein Campus until the start of the exam**
- **Report on conditional subjects/“Auflagen“!**



- **Study-Service-Center, Faculty of Engineering**



Gisela Jakschik



Christine Mohr

tf-stib@fau.de

- General information and advice for (international) students
- Inquiries about administrative bodies of the university
- Seminars for soft skills
- International partnership programs of the Faculty of Engineering
- Internships abroad

● Career Service

career-service@fau.de

www.career.fau.de

- Help with your job search
(also student jobs)
- Support with applications
- Professional check of application documents
- Simulation of job interviews
- Useful workshops and seminars



● Office for Gender and Diversity

gender-und-diversity@fau.de

- Support for women
- Advice for students with children
- Help for students with a migratory background
- Support for students experiencing discrimination of any kind (due to gender, ethnicity, religion, sexual orientation etc.)



● Advice for Students with Disabilities or Chronic Diseases

Dr. Jürgen Gündel

juergen.guendel@fau.de

- General advice and support (e.g. accessibility of buildings)
- Compensation of disabilities during examinations (e.g. more time)

What counts as a...

- **disability?** All physical and mental impairments lasting at least 6 months
- **chronic disease?** Illnesses that require at least one medical treatment per quarter over the course of one year

• Psychological-Psychotherapeutic Counseling

Dipl.-Psych. Elizabeth **Provan-Klotz**,
Psychological Psychotherapist

Martensstr. 3, Room 04.154



Assistance with:

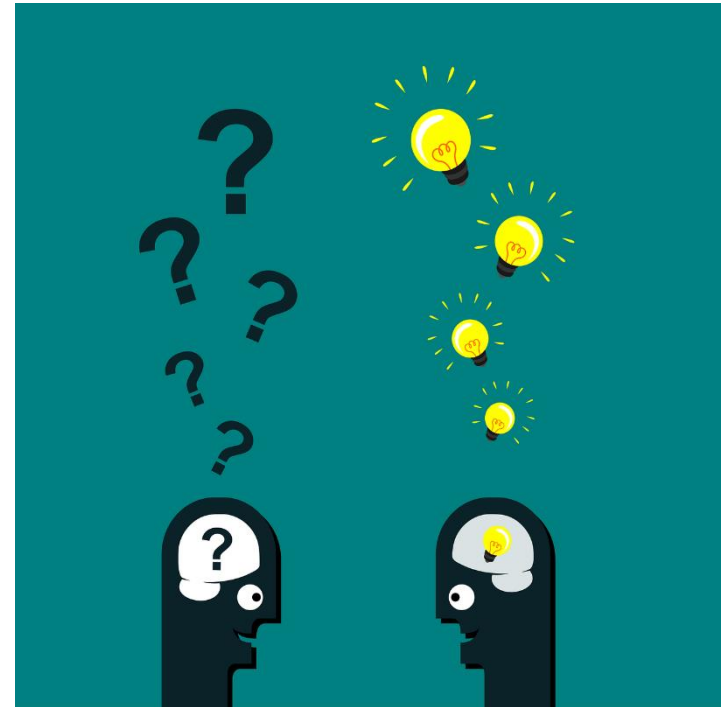
- Fear of speech, writing and exam
- Difficulties with learning, motivation problems
- Stress management
- Anger and impulse control problems
- Loneliness, depression, feelings of guilt, fears, thoughts of suicide
- Everyday studies with a chronic illness or disability
- Relationship, partner and family problems
- Identity and orientation problems
- Displacement from the parents and from the place of origin
- Questions about addiction and addictions (e.g. nicotine, alcohol, internet)
- Integration and cultural difficulties

- **Legal Advisory Service:**

rechtsberatung@werkswelt.de

<https://www.werkswelt.de/rechtsberatung>

- Problems with rental contracts, work contracts, visa status etc.
- Free of cost!



How to Find Information...

Weblink for all medical engineering-related services and information:

- www.medical-engineering.study.fau.eu
- www.medizintechnik.fau.de

...including today's presentation!

How to Find Information...

**General information for FAU students:
Search the web for 'FAU' + key word**

- e.g. FAU + language courses
- FAU + examinations office
- FAU + psychological services
- FAU + semester dates...

Master's Program Medical Engineering Program Structure



What is ECTS?

- ***European Credit Transfer and Accumulation System***
Assessment of student workload required for the learning outcomes of a program
 - 30 credits: **recommended** workload per semester
 - 1 credit: \approx 30 working hours
- You will find information on ECTS in the module catalogs, in the online information system UnivIS, on your Master's certificate/Transcript of Records.

Master's Program Medical Engineering: Structure

**Medical Specialisation
modules (10 credits)**

**Advanced Seminar
Medical Engineering
(5 credits)**

**Practical (lab) modules
(10 credits)**

**Flexible Budget Faculty of
Engineering (10 credits)**

**Free Choice Uni
(all faculties)
(5 credits)**

Branches of Study (50 credits)

- Medical Electronics (German)
- Medical Production Technology, Device Engineering and Prosthetics (German)
- Medical Image and Data Processing (German or English)
- (Health & Medical Data Analytics and Entrepreneurship (English))

Master's Thesis (30 credits)

Master of Science (M. Sc.)

120 credits in total

Master Course Scheme



M1	Medizinische Vertiefungsmodule/Medical specialisation modules gemäß § 44a Abs. 1	10
M2	Ingenieurwissenschaftliche Kernmodule/Engineering core modules gemäß § 44a Abs. 2	20
M3	Medizintechnische Kernmodule/Medical Engineering core modules gemäß § 44a Abs. 3	20
M4	Hauptseminar Medizintechnik/Advanced Seminar Medical Engineering gemäß § 44a Abs. 4	5
M5	Medizintechnische Vertiefungsmodule/Medical Engineering specialisation modules gemäß § 44a Abs. 5	10
M6	Medizintechnische Praxismodule/ Medical Engineering practical modules gemäß § 44a Abs. 6	10
M7	Flexibles Budget Technische Fakultät/Flexible budget Faculty of Engineering	10
M8	Freie Wahl Uni/Free choice Uni	5
M9	Masterarbeit/Master's thesis	30
Summe ECTS-Punkte		120

- **Modules for all students: 70 credits**
 - M 1: Medical specialisation modules (10 cr.)
 - M 4: Advanced seminar Medical Engineering (5 cr.)
 - M 6: Medical engineering practical modules (academic laboratory, research laboratory; 10 cr.)
 - M 7: Flexible Budget Faculty of Engineering (10 cr.): any **graded** course at the **Faculty of Engineering** on **Master's level** → see info in UnivIS
 - M 8: Free Choice Uni (5 cr.): any **graded** course at FAU or VHB (**exam with identity control**): e.g. language course etc.
 - M 9: Master's thesis (30 cr.)
- **Modules specific to your branch of study: 50 credits**
 - M 2: Engineering core modules (20 cr.)
 - M 3: Medical Engineering core modules (20 cr.)
 - M 5: Medical Engineering specialisation modules (10 cr.)

Master Program Medical Engineering: Structure

- Total of 120 ECTS credits should be evenly spread over four (or five) semesters; no strict rule but **highly recommended: ≈ 30 ECTS credits per semester**
- Few compulsory modules (conditional subjects, some mandatory subjects in the catalog, **see footnotes there!**)
- Mostly free choice within the list for each module group
- Not all lectures are offered in winter and summer (see catalog), time slots may differ from semester to semester; there might be time overlaps
(\rightarrow video lectures: www.video.fau.de)
- Recommendation for going abroad: 3rd or 4th semester (start planning now)

Semesters & Exams

- Regular duration of studies: 4 semesters/two years (can be extended to 5 semesters by re-registering + paying the semester fee); **summer semester 2021 = „corona semester“**
- Semester: lecture period (14 or 15 weeks) + lecture-free period (‘semester holidays’ ≈ 12 weeks)
- Two exam periods: first 2 weeks and last 3 weeks **of the lecture-free period**
- Failing an exam: **2nd + 3rd chance** in the **following two semesters** (automatic + **mandatory** registration) – **exception: conditions/‘Auflagen’ (max. 2 chances, i.e. 1 year!)**
- You can/must only take exams if you register for them.
- **Withdrawal** from registered exams: usually until 3 working days (Mon – Fri) before the exam without a reason – or later in case of illness/severe reasons (medical/other certificate); **current corona regulation: withdrawal until beginning of the exam via Mein Campus (or by not attending), no medical certificate needed**

Semesters & Exams

Summer semester 2021 (April 1st - September 30th 2021):

Lecture Period: **Apr 12th- Jul 16th**

Exam Registration: **May 17th- Jun 5th**

(Reminder via email!)

Re-registration for winter 2021/22: **Jul 1st - Jul 8th**

(Reminder via email!)

Semester break (no lectures): **Jul 17th- Oct 17th**

Exam periods: **Jul 19th- 31st & Sept 27th - Oct 15th**

www.fau.eu/education/study-organisation/semester-dates/

www.fau.eu/education/advice-and-services/examination-offices/examinations-office-faculty-of-engineering/

Conditional Subjects/‘Auflagen’

- **Must be passed within one year (deadline: March 31st, 2022)**
Otherwise they will prevent successful re-registration for the 3rd semester.
- **After successful completion of conditional subjects: Actively inform** Ms Jahreis (Examinations Office)!
- **Examination results of the 2nd semester might be published late.**
If this is your case, contact Ms Jahreis to get a faster correction.
- **The credits of conditional subjects are not part of the 120 credits for your Master’s program but you can use them in M8 (Free Choice Uni) if you wish.**

Conditional Subjects/‘Auflagen’

Lectures that are usually offered only once a year in summer semester (SS) or winter semester (WS):

- Grundlagen der Elektrotechnik II: SS, exam also in WS
- Algorithmen und Datenstrukturen für MT: WS (exercise classes and exam also in SS)
- Mathematik A3: WS; Mathematik A4: SS; exam also in SS/WS respectively
- Engineering Mathematics: SS, exam also on WS
- “Advanced C++ Programming” online course (WS+SS) at the **Virtual University Bavaria (VHB)***: www.vhb.org
→ Choose study program “Gesundheitstechnik” for the registration.

Types of Courses

- V/L: Vorlesung/lecture – generally no registration, attendance not mandatory
- Ü/E: Übung/tutorium; exercise class/tutorial – usually start in the 2nd week, further details in the 1st lecture, attendance usually not mandatory
- P: Praktikum/practical course (lab course) – attendance mandatory, early registration (see UnivIS) – not relevant for 1st semester
- S: Seminar – attendance mandatory, early registration (see UnivIS) – not relevant for 1st semester

Types of Exams/Course Achievement

- **Prüfungsleistung (PL)/Graded course achievement (gCA)**

- schriftlich [written]
- mündlich [oral]
- Seminar (presentation and paper)

Most of the exams at FAU are still on-site exams, very few online exams!

- **Studienleistung (SL)/Ungraded course achievement (uCA)**

- e.g. exercise classes or practical courses
- Hochschulpraktikum/Academic Laboratory
- Forschungspraktikum/Research Laboratory

Module Catalogs (available on the Medical Engineering webpage)

Typpe	Modulnummer	Module		V+Ü+S+P	Gesamt				Studien- und Prüfungsleistungen	Department	Modulverantwortlicher / Dozent	WS/SS
		Modulbezeichnung (Veranstaltungsname)	Abkürzung		WS	SS	WS	SS				

‘Grundcurriculum’/ common catalog (for all branches taught in German)

M 1 Medizinische Vertiefungsmodule												
			V+Ü+S+P	10	5	5	0	0	PL			
M 1.1'	Grundlagen der Anatomie & Physiologie für Nichtmediziner	AnaPhys_MIT	4+0+0+0	5	2,5	2,5	0	0	60 s	VORKLIN	Prof. Dr. Clemens Forster	WS/SS
	Clinical Applications of Optical Technologies and Associated Fundamentals of Anatomy	OMED/CA	4+0+0+0	5		5			45 s	KLIN	Prof. Dr. med. Michael Eichhorn	SS
M 1.2	Medizinische Vertiefung 1			5	5	0	0	0	60 s	KLIN	N.N.	WS
M 1.3	Medizinische Vertiefung 2			5	0	5	0	0	60 s	KLIN	N.N.	SS
Liste der Lehrveranstaltungen für M1.2 bzw. M1.3												
	Interdisziplinäre Medizin		0+0+2+0	2	2	0	0	0	45 s		Prof. Dr. med. Harald Mang	WS
	IT-Unterstützung im Prozess der diagnostischen Bildgebung		1+0+0+0	1	1	0	0	0	45 s		Dr. Thomas Kauer	WS
	Grundlagen der biologischen Strahlentherapie		4+0+0+0	4	0	0	0	0	45 s		Prof. Dr. med. habil. Christoph Distler	SS
	Grundlagen der biologischen Strahlentherapie		2+0+0+0	2,5	0	0	0	0	45 s		Prof. Dr. med. habil. Christoph Distler	WS
	Grundlagen der Krankheitserkennung		4+0+0+0	5	5	0	0	0	90 s		Prof. Dr. med. Harald Mang	WS
	Medizinische Biotechnologie	MBT	3+1+0+0	5	5	0	0	0	120 s		Prof. Dr. med. habil. Dr. rer. nat. Oliver Friedrich	WS
	Audiologie und Hörgeräte		1+0+3+0	5	5	0	0	0	90 s		Prof. Dr.-Ing. Dr. rer. med. Ulrich Hoppe	WS
	Medizinische Physik (Kathodenstrahlentherapie)											
	Cognitive Neurowissenschaften											

An updated version is published at the beginning of every semester!

Catalog for each branch of study

M 2 Ingenieurwissenschaftliche Kernmodule												
			V+Ü+S+P	20	10	10	0	0	PL			
Basismodule / Basic Modules (B)												
M 2.1	Ereignisgesteuerte Systeme	EGS	2+2+0+0	5	5	0	0	0	90 s	INF	Dr.-Ing. Michael Glaß	WS
	Übung											
M 2.2	Grundlagen der Systemprogrammierung (Systemprogrammierung 1)	GSP (SP 1)	2+2+0+0	5	0	5	0	0	90 s	INF	Prof. Dr.-Ing. Wolfgang Schröder-Preikschat	SS
	Übung											
M 2.3	Digitale Übertragung / Digital Communications	DÜ / DiCo	3+1+0+0	5	5	0	0	0	90 s	EEL	Prof. Dr.-Ing. habil. Johannes Huber, Prof. Dr.-Ing. Robert Schober	WS: engl SS: dt.
	Übung											
M 2.4	Signale und Systeme II	SISY II	2,5+1,5+0+0	5	0	5	0	0	90 s	EEL	Prof. Dr.-Ing. André Kaup	SS
	Übung											
M 2.5	Computergraphik / Computer Graphics	CG	3+1+0+0	5	5	0	0	0	30 m	INF	Prof. Dr.-Ing. Marc Stamminger, Prof. Dr. Günther Greiner	WS
	Übung											
M 2.6	Digitale Signalverarbeitung / Digital Signal Processing	DSV	3+1+0+0	5	5	0	0	0	90 s	EEL	Prof. Dr.-Ing. Walter Kellermann	WS
	Übung											
Aufbaumodule / Advanced Modules (A)												
M 2.7'	Pattern Recognition	PR	3+0+0+0	5	5	0	0	0	30 m	INF	Prof. Dr.-Ing. Joachim Hornegger	WS
M 2.8'	Pattern Analysis	PA	3+0+0+0	5	5	0	0	0	30 m	INF	Prof. Dr.-Ing. Elmar Nöth	SS
M 2.9	Statistische Signalverarbeitung / Statistical Signal Processing	STASIP	3+1+0+0	5	5	0	0	0	90 s	EEL	Prof. Dr.-Ing. Walter Kellermann	SS
	Übung											

Where can I find all the catalogs?

Website of the Medical Engineering programme:

<http://www.medizintechnik.studium.fau.de/>

→ Studierende → Masterstudium → Überblick und
Modulkataloge **FPO 2019**

<http://www.medical-engineering.study.fau.eu/>

→ Current students → General Study Information Master's
Program → General Study Information & Course Syllabus
(FPO 2019)

**Your FPO version remains valid for you throughout
your whole studies!**

Module catalogs are updated every semester!

Please read the footnotes in the catalogs!

What else can I find on the study program website?

<http://www.medizintechnik.studium.fau.de/>

<http://www.medical-engineering.study.fau.eu/>

- Study Guide (German and English version)
- Today's presentation slides
- Module handbook with content descriptions of each course (generated via UnivIS)
- Further information: on modules, Master's Thesis, studying abroad, accreditation of coursework etc.
- Links to examination regulations (Medical Engineering program=FPO, Faculty of Engineering: ABMPO)
- Important forms
- FAQ section
- News & events → updates on corona regulations!

M 9: Master's Thesis

- **independent execution of scientific tasks in Medical Engineering**
 - ➔ **Prepare yourself early on:** e.g. lecture “Nailing your thesis” (WS) can be used for Flexible Budget Faculty of Engineering (M 7)
- Prerequisites: 75 ECTS credits, completion of all conditional subjects and mandatory modules (footnotes in catalogs/exam regulations!)
- to be completed within 6 months
- Look for your topic **in due time** (end of your penultimate semester at the latest)!
 - **Select your modules in preparation of your thesis topic.**
- Look for thesis topics on the labs' websites, ask for personalized/non-advertised topics at the labs (professor, PhD students).
- Specific details, formalities, thesis form → Medical Engineering website

Foreign Language Training

Sprachenzentrum (Language Center): www.sz.fau.de

- Courses during the lecture period are **free of cost**.
- Intensive courses (with a fee) during the semester break
- **Registration** required for all courses
- Registration for **German courses**: online (**open as of now**); **highly recommended for internships & future job!**
- Recommended languages to prepare for studying abroad:
e.g. English, Spanish, Portuguese
- Courses also suitable for module group **M8 (Free Choice Uni)**

Online Tools



UnivIS



IdM portal: www.idm.fau.de Manage your personal data!

- An IdM login is required for nearly all personalized online services at FAU.
- Activate your **IdM Portal account** with the activation password mailed to you.
- Upload a photo to create your student ID card (FAUcard); **it will be sent to your semester address!**
- Problems: service counter/‘Service-Theke’ RRZE:
rrze-zentrale@fau.de

IdM portal: www.idm.fau.de Manage your personal data!

Email address:

- An FAU email address has been generated for you.
- It is used as default recipient for emails from the university.
To relay: IdM Portal → Self Service → Email → Click on the “...”-button → Field “Relay to”
- **All important information regarding your studies (including corona updates) will be sent to your FAU email address!**

MeinCampus: Manage Your Exams

- **Login**

- <https://www.campus.fau.de>
- “Single Sign-On”

- **Prüfungen (*Exams*)**

- Exam registration (when active)
- Withdrawal from exams
- Overview of registered exams
- Overview of grades and acquired ECTS credits



Detailed instructions: see Medical Engineering website

StudOn: E-learning Platform

- <https://www.studon.fau.de>
- Often used for courses that require registration
- Platform for sharing course materials

The screenshot shows the StudOn user interface. At the top, there is a navigation bar with the StudOn logo, a search bar, and a user profile icon with the text 'Abmelden'. Below the navigation bar, there are three main panels:

- Nachrichten - Letzte 6 Monate** (1-5 von 14) weiter:
 - Wiki: Wiki für Korrekturen zum Skript Hauptseite (20. Jul 2014, 14:42)
 - Forum: Studierendenforum 36 Beiträge hinzugefügt. (18. Jul 2014, 15:10)
 - Kurs: Forensische Informatik Es wurden 37 Dateien hinzugefügt. Es wurden 5 Dateien aktualisiert. (10. Jul 2014, 00:57)
- Ausgewählte Angebote**:
 - Vorlesung (Aktionen ▼)
 - Übungen (Aktionen ▼)
 - Berufspädagogik (Aktionen ▼)
 - Einführung in die Erwachsenen- und Weiterbildung (Aktionen ▼)
- Kalender** (iCal) and **Mail** (0 Mail(s))

A message in the center of the dashboard states: "Zur Beschleunigung der Anzeige wurden die Seitenblöcke 'Kalender', 'Nachrichten' und 'Aktive Nutzer' standardmäßig ausgeblendet. Sie können sie selbst über das Menü 'Aktionen' rechts neben dieser Überschrift wieder einblenden."

What's next?

1. Compile your class schedule

→ UnivIS (guided session by student association afterwards)

2. Register for courses – only if needed (**information in UnivIS**): usually via StudOn (**see registration link on the respective lecture page in UnivIS**)

If registration is not required, simply join the first meeting.

3. Register for exams → MeinCampus (**May/June, reminder via email**)

4. Re-register for the next semester (**1st week of July**)

→ bank transfer (**reminder and details via email**)

5. Study & pass exams → study groups, time management, practice with old exams from FSI, get advice from our psychologist if needed

6. **Actively** report on your conditional subjects

→ Examinations Office (Ms Jahreis)

Important info for international students

1. There is no need to travel to Germany right now. You can take all of your classes online.
2. We strongly advise against coming to Germany right now if you don't have a strong (family/friends) network here. If you plan to come anyway, **please contact your Study Advisor in advance!**
3. You will need to come to Germany if you want to take exams (exam period starting on Jul 19th). → Start the visa process now! You will find the respective document for the German Embassy attached to your admission letter and in your IdM account.
4. **Please pay close attention to the FAU corona updates:**
www.fau.eu/corona/

Tips & Tricks

1. Be proactive, inform yourself, search online, talk to people.
2. **Read the study guide + examination regulations.**
3. **Read the footnotes in your module catalog.**
4. If there is a problem, talk to your tutor/lecturer/study advisor/psychologic counsellor **as soon as possible.**
5. Engage in (virtual) campus life (student organizations: <https://stuve.fau.de/en/gruppen/>)
6. Take language classes, find a language buddy: <https://sz.fau.eu/departement-media-autonomous-learning/autonomous-language-learning/tandem/>
7. Build a MedTech network through the workshops, summer schools, hackathons etc. offered/promoted by ZiMT.
8. Organize study groups, whatsapp groups, zoom coffee hours etc., even from abroad. **Connection with fellow students is crucial!**

Thank you very much!

Have a great start of the
semester!
Stay healthy and connected! 😊

