Medicine & Engineering Our strong combination at FAU Erlangen-Nürnberg

Welcome Master's students Medical Engineering!

MA MT at FAU | Claudia Barnickel





□ Welcome by Simone Reiprich

(Director Central Institute for Healthcare Engineering /ZiMT)

□ Introduction to the program by Claudia Barnickel

(Program Coordinator and Advisor Medical Engineering)

Welcome by FSI Medizintechnik

(Student association Medical Engineering)
Group quiz: Fun facts about Germany and Franconia

10:15-10:45 Coffee break



Group quiz: solutions and prizes Introduction computer pools & creating your class schedule

(1st floor, blue computer science tower)

12:45-13:45 Lunch break (Mensa)

Guided campus tour

(starting point: round bench in front of Mensa, red square)

From 14:15 Get-together with drinks (same bench)



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The diversity of Medical Engineering at FAU





Growth Market Medical Technology

• Increase in population and diseases

 Demographical development until 2050: More people, longer life expectancy:

•	Diabetes	+ 50 %	%
•	Infarction	+ 100 %	%

• Cancer + 50 %

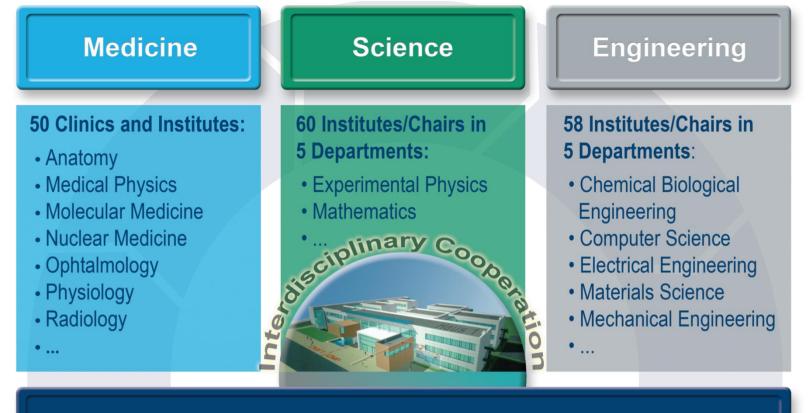
Dementia	+ 100 %
Stroke	+ 100%

 Increasing demand for diagnostic and therapeutic treatment





Strategic Cooperation of Faculties for Interdisciplinary Research & Teaching



Central Institute of Healthcare Engineering (ZiMT)



- A: Neues HS-Gebäude, Ulmenweg 18
- B: Audimax, Bismarckstr. 1
- C: Anatomie, Universitätsstr. 19
- D: Biochemie, Fahrstr. 17
- E: Organische Chemie, Henkestr. 42
- F: ZiMT/MVC, Henkestr. 91
- G: Physikum, Staudtstr. 5
- H: Südgelände, Egerlandstr. 3

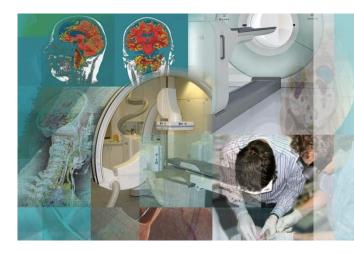








Persons in Charge



MA MT at FAU | Claudia Barnickel



Program representatives

• Program Director

(Chair for Pattern Recognition)

Studiengangsverantwortlicher

• Prof. Dr.-Ing. Andreas Maier

• Program Coordinators (ZiMT)

Studiengangskoordinatoren

- Dr. nat. Simone Reiprich
- Deputy: Dipl.-Ing. Tobias Zobel









• Study Program Coordinator and Advisor

Claudia Barnickel

blue computer science tower, 2nd floor, room 02.158

Open consultation hours (no appointment):

Mon-Thu, 1-4 pm

Claudia.Barnickel@fau.de

- → planning your studies
- accreditation of coursework achievements
- → support with formalities
- \rightarrow all kinds of questions regarding your studies
- → personal problems





General Study Advisory

Informations- und Beratungszentrum (IBZ)

Elisabeth Bächle-Grosso

Halbmondstr. 6 -8

91054 Erlangen

Room: 1.031

elisabeth.baechle-grosso@fau.de



- → general study-related problems
- → information about changing your study program
- student visa issues (certificate for foreigners office)



Examinations Office

Prüfungsamt

Helga Jahreis

Halbmondstraße 6 91054 Erlangen Room: 1.042 helga.jahreis@fau.de



- → managing credits, grades, exams
- → hand in paper certificates ("Scheine")
- \rightarrow withdrawal from exams (illness)
- → report on conditional subjects/"Auflagen"



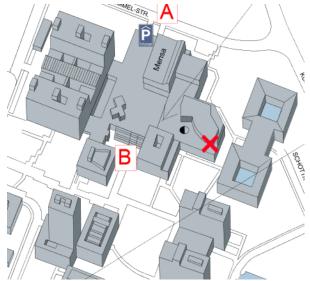
International Office School of Engineering/TechFak

Christine Mohr

Erwin-Rommel-Str. 60 91058 Erlangen Room: U 1.250 <u>christine.mohr@fau.de</u>

- → Info about studying/interning abroad
- → General help and support for international students







• Career Service

Susanne Winkelmaier, Nicole Jakob, Stefanie Rösch

career-service@fau.de

www.career.fau.de

- → Help with your job search
- → Support with applications
- → Check of application documents
- → Useful workshops and seminars





• Office for Gender and Diversity

Bismarckstraße 6 91054 Erlangen gender-und-diversity@fau.de

- → Support for women (in cases of violence, harassment)
- \rightarrow 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.)





Help with personal crisis

Psychological support Studentenwerk:

Psychologisch-Psychotherapeutische Beratungsstelle Hofmannstraße 27, 2nd floor 91052 Erlangen



Open consultation (anonymous, without appointment):

Tue, 1:30 to 4:30 pm

Legal advisory service Studentenwerk:

Hofmannstraße 27, 2nd floor, Room 201 See website for consultation hours:

www.werkswelt.de



One URL \rightarrow all university services:

<u>www.fau.eu/study/current-students/</u>
<u>www.fau.de/studium/im-studium/</u>



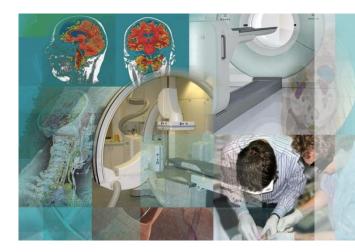
One URL → all Medical Engineering services:

<u>www.medical-engineering.study.fau.eu/</u>
 <u>www.medizintechnik.fau.de</u>





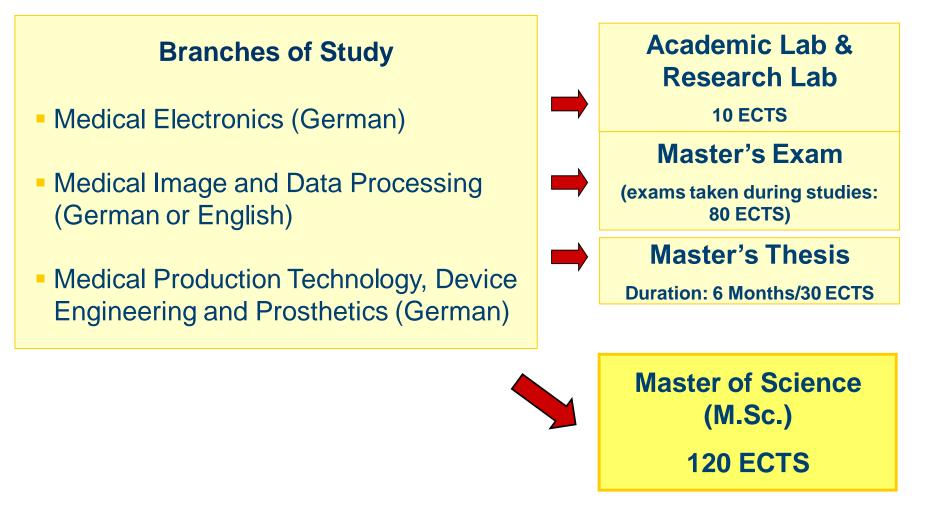
Program Structure



MA MT at FAU | Claudia Barnickel



Structure Master's Program Medical Engineering





What is "ECTS"?

- European Credit Transfer and Accumulation System Student workload required for the learning outcomes of a program
 - > 30 credits = recommended workload per semester
 - > 1 credit \simeq 25 to 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



Semesters & Exams at the Faculty of Engineering

- Regular study time: 4 semesters/two years (can be extended to 5)
- 1 semester consists of the lecture period (12-14 weeks)+ holidays/lecture-free period (~12 weeks)
- Two exam periods: first 2 weeks and last 3 weeks of the holidays
- Failing an exam: **2nd + 3rd chance** in the **following** two semesters (**mandatory** registration) **except conditions!**
- You can/must only take exams if you register for them.
- You can withdraw from registered exams until the 3rd working day before the exam date without any reason or even later in case of illness (medical certificate).



Semesters & Exams at the Faculty of Engineering Summer Semester 2017: 01.04.2017 – 30.09.2017

•	Lecture Period:		24.04 30.07.
•	Exam Registration:		05.06 23.06.
	(Reminder via email!)		
•	Re-Registration for WS 1	7/18:	03.07 10.07.
	(Reminder via email!)		
•	Semester break (no lectu	res):	31.07. – 15.10.
	Exams:	31.0712.08. ar	nd 22.0914.10.

https://www.fau.eu/study/current-students/semester-dates/



Conditional subjects/"Auflagen"

- Must be passed within one year (deadline: 31.03.18).
 Otherwise they will prevent successful re-registration for the 3rd semester. No exceptions!
- After successful completion of conditional subjects: inform Mrs. Jahreis (Examinations Office)
- Examination results of the 2nd semester might be published late (after the deadline).
 If this is your case contact the Examinations Office in due time and ask for a fast correction!



Conditional subjects/"Auflagen"

Lectures are only offered once a year (summer or winter):

- Grundlagen der Elektrotechnik II: SS
- Algorithmen und Datenstrukturen MT: WS (exercise class and exam also in SS)
- Mathematik A3: WS (access to study materials and exam also in SS → contact lecturer)
- Engineering Mathematics: SS
- Advanced Programming Techniques: lecture and exam + project only in WS → start studying C++ now! (consult with lecturer + info in UnivIS)



Master Course Scheme (from examinations regulation/FPO)

No.	Module groups	ECTS cred- its		sem sem	este	r	Type and scope of the course and examination achievement ⁴⁾			
			1.	2.	3.	4.				
M 1	Medical specialisation modules according to the catalogue of elective modules for all branches of study ^{1) 2) 3)}	10	5	5			EA: written examination (Klausur) 60/90 min. /oral examination 30 min.			
M 2	Engineering core modules according to catalogue of elective modules for specific branch of study ^{2) 3)}	20	10	10			EA: written examination (Klausur) 60/90 min. /oral examination 30 min.			
M 3	Medical Engineering core modules accord- ing to catalogue of elective modules for spe- cific branch of study ^{3) 5)}	20	10	10			EA: written examination (Klausur) 60/90 min. /oral examination 30 min.			
M 4	Medical Engineering core skills according to basic curriculum in catalogue of elective modules for specific branch of study ³⁾	10	5		5		EA (reports + presentations acc. to dept. specifica- tions)			
M 5	Medical Engineering specialisation mod- ules according to catalogue of elective mod- ules for specific branch of study ^{3) 6)}	10		5	5		EA : written examination (Klausur) 60/90 min. /oral examination 30 min.			
M 6	Medical Engineering practical skills ac- cording to the catalogue of elective modules for all branches of study ³⁾	10			10		uCA (reports acc. to module descriptions and dept. speci fications)			
M 7	Flexible budget 7)	10			10		EA: according to applicable exami- nation regulations			
M 8	Master's thesis	30				30	EA (report + presentation)			
	Total ECTS credits 9)	120	30	30	30	30				



Module Catalogs (www.medizintechnik.studium.fau.de)

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	Fundamentals of Anatomy	OMED/CA	4+0+0+0	5		5		_	45 s	KLIN	Prof. Dr. med. Mic	chael Eicnnorn	_			S	<u> </u>	CC	วท	nmon catalog)
	2 Medizinische Vertiefung 1	4		5	5	0	0 0		60 s	KLIN	N.N.					W	0				2
M 1.3	3 Medizinische Vertiefung 2	4		5	100	5	0 0	4	60 s	KLIN	N.N.					s	5	(fr	۱r	all students)	
	Liste der Lehrveranstaltungen für M1.2 bzw. M1.3	4	0.0.2+0	-	2			+	45.0		Deef Dr. mod. Ha	did Mong				w		10	71	ansuucinoj	
	Interdisziplinäre Medizin IT-Unterstützung im Prozess der	4	0+0+2+0	2	4				45 s		Prof. Dr. med. Har					_					
	diagnostischen Bildgebung		1+0+0+0		1		0 0	4	45 s		Dr. Thomas Kaue	1				W		-	-		
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	Medizinische Biotechnologie	MBT	3+1+0+0	5		5			120 s		Prof. Dr. med. hat				frich	W	-			-	
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	√ ≤	M 2.6	M 2.6 Digitale Signalverarbeitung / Digital Signal Processing DSV 3+1+0+0 5 5 Ubung						0 9	90 s	EEI	Prof. DrIng. Walter Kellermann	W								
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PA

STASIP

3+0+0+0 5

3+1+0+0 5

5

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30 m INF

90 s EEI

Prof. Dr.-Ing. Elmar Nöth

Prof. Dr.-Ing. Walter Kellermann

M 2.81 Pattern Analysis

Übung

Statistische Signalverarbeitung / Statistical Signal Processing

M 2.9

SS

SS



20 ECTS

70 ECTS

Structure – Master Medical Engineering

- Modules specific to your branch of study:
 - M 2: Engineering core modules: 20 ECTS
 - M 3: Medical Engineering core modules:
 - M 5: Medical Engineering specialisation modules: 10 ECTS
- Modules identical for all students:
 - M 1: Medical specialisation modules
 - M 4: Medical engineering core skills (law, economics, ethics)
 - M 6: Medical engineering practical skills (Academic Laboratory, Research Laboratory)
 - M 7: Flexible budget (any *graded* course offered at FAU)
 - M 8: Master's thesis



Structure – Master Medical Engineering

- Total of 120 ECTS should be evenly spread over four semesters
 - +/- 30 ECTS per semester
- Very few compulsory modules (conditional subjects, some mandatory subjects, see footnotes in catalog!)
- Mostly free choice within the list for each module group
- Not all lectures are offered in winter and summer (see catalog).
- Recommendation for going abroad: 3th or 4th semester



Types of Courses

- V/L = Vorlesung/lecture no registration, attendance not mandatory
- Ü/E = Übung/Tutorium; exercise class/tutorial usually registration in the 1st week, further info in the 1st lecture
- P = Praktikum/Practical course (lab course) attendance mandatory, early registration – not relevant for 1st semester
- S = Seminar attendance mandatory, early registration not relevant for 1st semester



Types of exams/course achievement

- Prüfungsleistung (PL)/Graded course achievement (gCA)
 - schriftlich [written]
 - mündlich [oral]
 - Seminar (presentation and paper)

• Studienleistung (SL)/Ungraded course Achievement (uCA)

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



Where can I find all the catalogs?

Website of the Medical Engineering program

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

→ "Studierende" → "Master FPO-Version 2013 → Überblick"

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

→ "Current students" → General Study Information Master's Program

Catalogs are updated every semester! Read the footnotes!



What else is there to find on the study program website?

http://www.medizintechnik.studium.fau.de/ http://www.medical-engineering.study.fau.eu/

• Study Guide

- Module handbook with content descriptions of each class (generated via UnivIS)
- Further Information: on modules, Master's Thesis, studying abroad, accreditation of coursework etc.
- Links to examination regulations (FPO, APO)
- important forms
- FAQ-section



M 8: Master's Thesis

- independent execution of scientific tasks in Medical Engineering
 - > prepare yourself early on: e.g. lecture "Nailing your thesis" (SS+WS)
- Prerequisites: 75 ECTS and completing all conditional subjects
- to be completed within 6 months
- Look for your topic in due time (3rd semester, beginning of your last semester at the latest!)
 - > Meaning also: Select your modules with prudence
- Look for thesis topics on the chair's website/ask for personalized/nonadvertised topics at the chairs
- Specific details, formalities, thesis form: Medical Engineering website



Extracurricular Foreign Language Training

Sprachenzentrum (Language Center), Bismarckstraße 1 <u>www.sz.fau.de</u>

- **Registration** required for all courses
- Registration for German courses: online + in person open now! Highly recommended for internships & future job!
- Recommended languages for studying abroad:

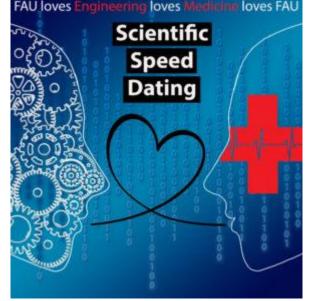
e.g. English, Spanish, Portuguese

• Courses also suitable for module group **M7/Flexible budget**



Special course offer in SS 2017: Scientific Speed Dating

- 2,5-5 ECTS for Academic Laboratory/Hochschulpraktikum module
- Meet researchers from the Faculty of Medicine and Engineering in a relaxed atmosphere (April 27th, 6 pm)
- Find a topic you like and work on a real research project
- Online registration on the Medical Engineering website last chance today!
- More info ask me during coffee break.







Online Tools



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IdM portal: 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 → guided session later on
- Problems: Service-counter/"Service-Theke": Martensstraße 1, 1st floor

Email address

- A FAU-mail address has been automatically generated for you.
- It is used as default recipient for mails from the university.
 To relay: IdM Portal → Services → Click on the address → Field "Relay to"

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MeinCampus: manage your exams

- Login
 - https://www.campus.fau.de
 - Single Sign-On



- Prüfungen (Exams)
 - Exam Registration/Cancelation (when active June 5th-23rd)
 - See your registered exams
 - > Overview of Grades/Course Achievements

→ detailed instructions on the Medical Engineering website



StudOn: E-learning platform

- Often used for courses that require registration (seminars, practical courses)
- Platform for sharing course materials
- You will be introduced to it later on today.

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What's next?

- 1. Compile your class schedule
 - \rightarrow UnivIS (guided session later on today)
- 2. Register for courses if needed (info UnivIS), if not required simply go the 1st meeting
 - \rightarrow Registration: usually via StudOn (see registration link in UnivIS)
- 3. Register for exams \rightarrow MeinCampus (June 5th to 23rd)
- 4. Re-Register
 - \rightarrow Bank info in MeinCampus + bank transfer (first week of July)
- 5. Study & pass exams → brain, study groups, time management → get old exams from FSI
- 6. Report on your conditional subjects → Examinations Office (Mrs. Jahreis)



Tips & tricks

- 1. Be proactive, inform yourself, talk to people, search online.
- 2. If there is a problem talk to your tutor/lecturer/study advisor *as soon as possible*.
- 3. Engage in campus life (student organisations, parties, study groups, buddy program).
- 4. Take language classes/speak German in daily life.
- 5. Read the study guide + examination regulations.
- 6. Read the **footnotes** in your module catalog.
- 7. Take part in the workshops, summer schools etc. offered/promoted by ZiMT.

Thank you for your attention!

Any questions?

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Group Quiz: Solutions and Prizes Introduction Computer-Pools & Creating your Class Schedule

(1st floor, blue computer science tower)

12:45-13:45 Lunch break (Mensa)

□ Guided campus-tour

(starting point: round bench in front of Mensa, red square)

From 14:15 Get-together with drinks (same bench)