# Information Technology (IT) Master of Engineering
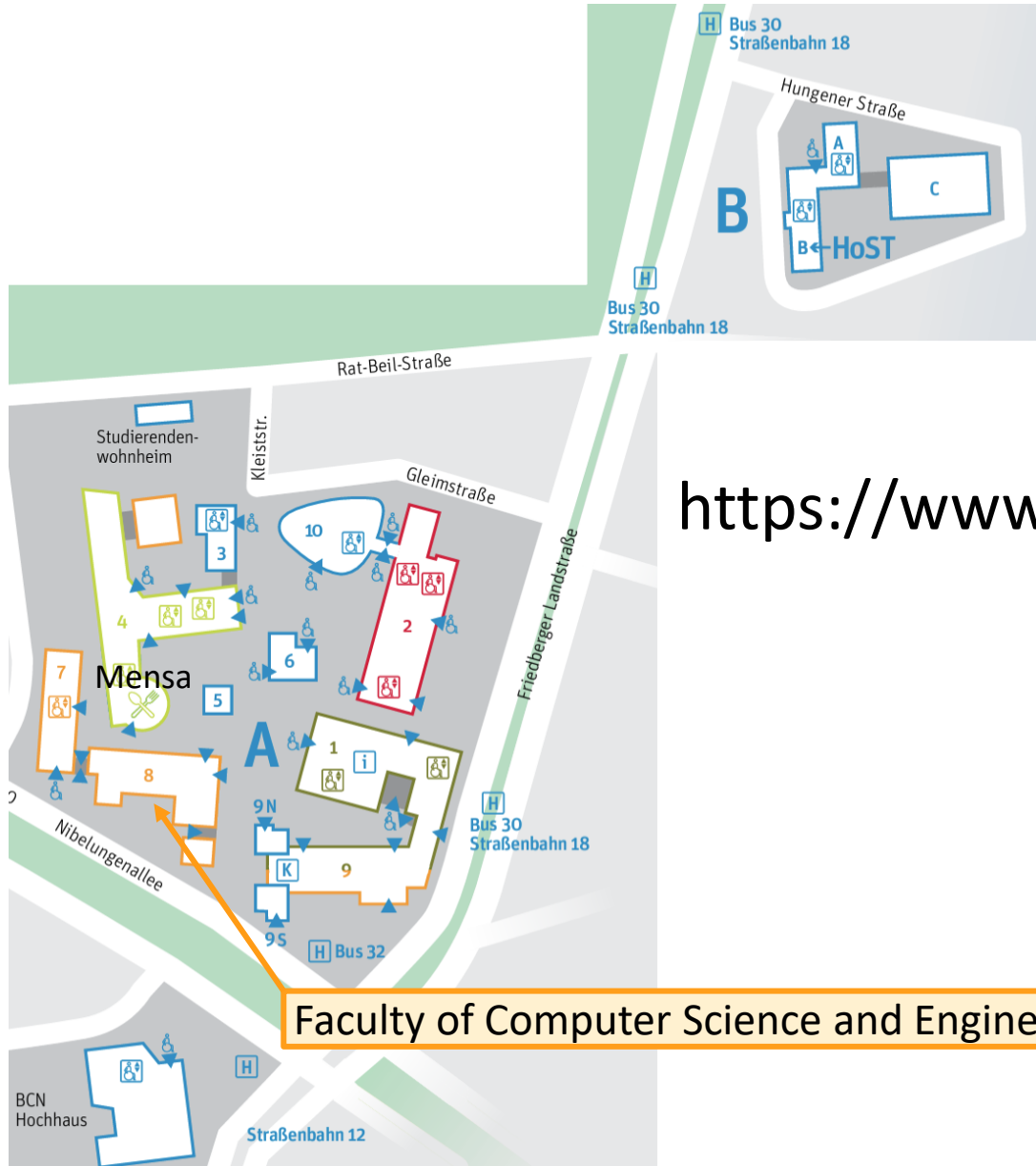
## Welcome to Frankfurt University of Applied Sciences

| | | | | | | ECTS Punkte (CP) |
|---|---|---|---|---|---|---|
| Information Technology (viersemestrig) (M.Eng.) | | | | | | |
| Semester 4 | 13 Master Thesis and Colloquium 30 CP | | | | | |
| Semester 3 | 7 Machine Learning 5 CP | 8 Mobile Computing 5 CP | 9 Field Theory for Optical and Microwave Communication Systems 5 CP | 10 Autonomous Intelligent Systems 5 CP | 11 Optional Technical Subject 5 CP | 12 Project 5 CP |
| Semester 2 | 1 Vector Analysis 5 CP | 2 Stochastic Signals and Systems 5 CP | 3 Digital Baseband Transmission and Modulation Methods 5 CP | 4 Cloud Com… 5 CP | …al | |
| Semester 1 | A Methods, Systems and Networks for Digital Communication 5 CP | B Circuit Design for Communication Systems 5 CP | C Software Engineering 5 CP | D Image Proces… Identificati… Dynamic Sy… 5 CP | …y and …cs | |

ASIIN accredited degree program

**Fachbereich 2** Informatik und Ingenieurwissenschaften

# Map of FRA-UAS



https://www.frankfurt-university.de/

Faculty of Computer Science and Engineering

# Why Master's studies, why Master´s degree?

- Fun on studying
- Larger methodological skills
- Good career possibilities worldwide
- Scientific work, research and development (R&D)
- Sometimes subsequently PhD, scientific career (Master!)
- Higher salary, at least in the first job
- Management position
- …

## How?

- study – study – study

# Admission Requirements

- Bachelor degree in **Electrical Engineering and Information Technology** with a concentration in Information and Communication Technology or a comparable field

- Average mark $\leq 2.0$

- Good skills in
  - Mathematics
  - Electrical Engineering
  - Electronics
  - Communication Technology
  - Software
  - Signal Processing and Control Engineering

- Good English language skills

Prof. Dr. Armin Lehmann

# Master IT-Studies in Fb2 of FRA-UAS

Fb2 – Fachbereich 2 (engl. Faculty)

- 4 semesters

- In 1st and 2nd semester especially lectures and laboratories
  - Mathematical subjects, e.g. Vector Analysis, Stochastic Signals and Systems
  - Hardware and High Frequency Technology
  - Communication Technology
  - Software
  - Cloud Computing and Computational Intelligence, e.g. artificial neural networks

- In 3rd and 4th semester focus on projects and Master thesis (5 month)

- All lectures/courses in English
- Very international students
- About 65+ registered students per year
- Degree: Master of Engineering

# Master IT – Moduls Overview (Curriculum)

| | | | | | | |
|---|---|---|---|---|---|---|
| **4. Semester** | **30 ECTS** | **Master Thesis and Colloquium** (13) | | | | |
| **3. Semester** | **30 ECTS** | Machine Learning (7) | Mobile Computing (8) | Field Theory for Optical and Microwave Communication Systems (9) | Autonomous Intelligent Systems (10) | Optional Technical Subject (11) | Project (12) |
| **2. Semester** | **30 ECTS** | Vector Analysis (1) | Stochastic Signals and Systems (2) | Digital Baseband Transmission and Modulation Methods (3) | Cloud Computing (4) | Digital Switching and Routing (5) | Computational Intelligence (6) |
| **1. Semester** | **30 ECTS** | Methods, Systems and Networks for Digital Communication (A) | Circuit Design for Communication Systems (B) | Software Engineering (C) | Image Processing and Identification of Dynamic Systems (D) | IT-Security (E) | Cultural Diversity and Business Ethics (F) |

- 1st semester:     25 SWS (semester hours per week)
- 2nd semester:     27 SWS
- 3rd semester:     16 SWS
- Full time studies

# Curriculum 1st Semester

| Module | Examination Type | Semester Hours/Week | Abbr. |
|---|---|---|---|
| Methods, Systems and Networks for Digital Communication | Written Examination 90 Minutes | 4 SWS (Lectures) | MDC |
| Circuit Design for Communication Systems | Written Examination 120 Minutes | 4 SWS (Lectures) | CDCS |
| Software Engineering | Written Project Report with Presentation | 2 SWS (Lectures) 2 SWS (Project) | SE |
| Image Processing and Identification of Dynamic Systems | Written Examination 90 Minutes | 3 SWS (Lectures) 2 SWS (Lectures) | IP IDS |
| IT-Security | Written Examination 90 Minutes | 4 SWS (Lectures & Exercises) | ITS |
| Cultural Diversity and Business Ethics | Written Paper with Presentation | 2 SWS (Seminar) 2 SWS (Seminar) | BCD BBE |
| | **Total Sum** | 25 SWS | |

(1 SWS = 45 minutes)

# Lectures, Timetable

- Monday until Friday, Saturday is also possible

- Duration: 2 x 45 min = 90 min (one period/block)

- In principle there are 3 periods in the morning and 4 periods in the afternoon

- Please look at the timetable:
  https://campuas.frankfurt-university.de/mod/resource/view.php?id=16815

# Lectures, Timetable

| WiSe 23/24 | | | Master Informa |
|---|---|---|---|
| | | | 1. Sem. |
| **Montag** | 1 | 08:15 / 09:45 | |
| | 2 | 10:00 / 11:30 | MDC-V / *Trick* / 8-14 |
| | 3 | 11:45 / 13:15 | MDC-V / *Trick* / 8-14 |
| | 4 | 14:15 / 15:45 | SE-V / *Dobric* |
| | 5 | 16:00 / 17:30 | SE-P / *Dobric / Pech* / 8-103 |
| | 6 | 17:45 / 19:15 | SE-P / *Dobric / Pech* / 8-103 |
| **Dienstag** | 1 | 08:15 / 09:45 | |
| | 2 | 10:00 / 11:30 | CC-P / *Dobric / Pech* / 8-103 |
| | 3 | 11:45 / 13:15 | CC-P / *Dobric / Pech* / 8-103 |
| | 4 | 14:15 / 15:45 | |
| | 5 | 16:00 / 17:30 | |
| | 6 | 17:45 / 19:15 | |
| **Mittwoch** | 1 | 08:15 / 09:45 | IP-V / *Nauth* / ab 09:00 Uhr im 8-14 |
| | 2 | 10:00 / 11:30 | IP-V / *Nauth* / 8-14 |
| | 3 | 11:45 / 13:15 | IDS-V / *Jungke* / 8-14 |
| | 4 | 14:15 / 15:45 | |

- Methods, Systems and Networks for Digital Communication
- Software Engineering
- Advanced Semesters only
- Image Processing
- Identification of Dynamic Systems

| | | | Master Informa |
|---|---|---|---|
| **Donnerstag** | 1 | 08:15 / 09:45 | |
| | 2 | 10:00 / 11:30 | ITS-Ü / *Frick* / (Optional) |
| | 3 | 11:45 / 13:15 | CDCS-V / *Weber* / 8-14 |
| | 4 | 14:15 / 15:45 | CDCS-V / *Weber* / 8-14 |
| | 5 | 16:00 / 17:30 | ITS-Ü / *Frick* / 8-14 |
| | 6 | 17:45 / 19:15 | ITS-V / *Shala* / 8-14 |
| **Freitag** | 1 | 08:15 / 09:45 | |
| | 2 | 10:00 / 11:30 | BCD-V / *Haimerl* / 4-111+112 |
| | 3 | 11:45 / 13:15 | BCD-V / *Haimerl* / 4-111+112 |
| | 4 | 14:15 / 15:45 | BBE-V / *Lämmlein* / Block event (dates to follow) |
| | 5 | 16:00 / 17:30 | BBE-V / *Lämmlein* / Block event (dates to follow) |
| | 6 | 17:45 / 19:15 | |
| **Samstag** | | | BBE-V / *Lämmlein* / Block event (dates to follow) |

- Circuit Design for Communication Systems
- IT Security
- Cultural Diversity
- Business Ethics

# Lectures, Modules

- Start of lectures: Tuesday, 17th October 2023

- All lectures are in English

- Pilot course: https://campuas.frankfurt-university.de/mod/url/view.php?id=16816

- Password for pilot course: ***Lotsenkurs_E1***

- End of lectures: Friday, 9th February 2024

- Examination period: 12th February – 23rd February 2024

- Vacations are from 23rd December 2023 – 5th January 2024

# Organisation and Administration

- Faculty of Computer Science and Engineering (Fb2):
  https://www.frankfurt-university.de/en/about-us/faculty-2-computer-science-and-engineering/welcome-to-faculty-2/

- E-Learning platform Moodle
  - https://campuas.frankfurt-university.de
  - https://campuas.frankfurt-university.de/course/index.php?categoryid=50
  - CIT-Account Login required

- Postings (building 8, 1st floor, corridor): timetable, reports on current affaires, information acc. to examinations, decisions of examination board

Prof. Dr. Armin Lehmann

# Secretariat

- Teaching Unit Electrical Engineering
  - Ms Zühal Demirezen and Ms Yasemin Kilb
  - Building 8, 1st floor, Room 109
  - No fixed office hours



**Zühal Demirezen**
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Fax : +49 69 1533-2012
✉ sekretariat.lee@fb2.fra-uas.de



**Yasemin Kilb**
Secretary for electrical engineering study programs
Building 8, Room 109
Phone : +49 69 1533-2240
✉ sekretariat.lee@fb2.fra-uas.de

# Examination Office

- Teaching Unit Electrical Engineering
  - Applications and requests concerning examinations or registrations
  - Ms C. Häusler, pruefungsamt_lehreinheitelektrotechnik@fb2.fra-uas.de
  - Building 8, ground floor, Room 7
  - Office hours during the lecture period:
    - Monday to Thursday: 9:30 a.m. to 12 noon
    - Tuesday to Thursday: 01:30 p.m. to 03:30 p.m.
    - Friday: 10 a.m. to 11 a.m.
  - https://www.frankfurt-university.de/en/about-us/faculty-2-computer-science-and-engineering/contacts-at-faculty-2/examination-office/

# Organisation and Administration

**Head of Degree Course**
Prof. Dr.
Armin Lehmann
Building 8, Room 6
armin.lehmann@fb2.fra-uas.de

**Head of Examination Board**
Prof. Dr.-Ing.
Ulrich Trick
Building 8, Room 6
trick@e-technik.org

**Dean of Students &
Complaint Management**
Prof. Dr.-Ing.
Sven Kuhn
Building 7, Room 211
studiendekan@fb2.fra-uas.de

Professors/Lecturers
supervising the courses:
- Prof. Dr. Egbert Falkenberg
- Prof. Dr. Sebastian Helmle
- Prof. Dr. Manfred Jungke
- Prof. Dr. Barbara Lämmlein
- Prof. Dr. Peter Nauth
- Prof. Dr. Andreas Pech
- Prof. Dr. M. O. Steinhauser
- Prof. Dr. Peter Weber
- Prof. Dr.-Ing. Gernot Zimmer
- Dr. Damir Dobric
- Dr. Besfort Shala
- Dr. Patrick Wacht
- Sarah Haimerl
- …

# Important Information Sources

- Website Master IT
  https://www.frankfurt-university.de/en/studies/master-programs/information-technology-meng/for-prospective-students/

- Documents for "Examination Regulations":
  "Prüfungsordnung" (examination regulations) and
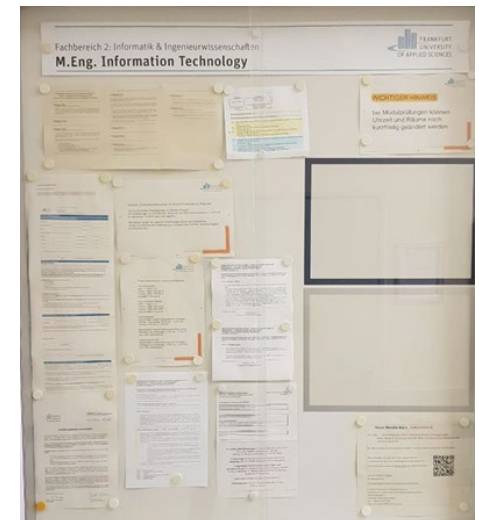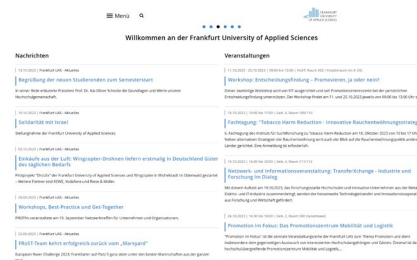  "Modulhandbuch" (module handbook, course catalogue)

- Postings (1st Floor, Building 8)

- FRA-UAS web pages

- CampUAS web pages

- Web pages of professors, e.g. www.e-technik.org or ict-ffm.de

- Consultation hours of professors (online)

# Examinations

- See document "Examination Regulations"
- See document "Module Handbook/Descriptions"
- Kinds of exams: written, oral, project report, presentation, seminar
- Information about exams via postings

- Prerequisites
  - E.g. successful participation in a laboratory
  - Online registration necessary
  - https://his.frankfurt-university.de/qisserver/
  - Check your admission!
  - Online registration also for labs and projects necessary
  - HowTo: https://www.youtube.com/watch?v=IK5GrLROCvI

Deadlines Winter Semester 2023/2024:
Registration deadline in the HIS for the preliminary work of the modules
of the 1st semester ends on **Wednesday, 25th October 2023**
The registration deadlines for projects also end on **Wednesday, 25th October 2023**
**No late registrations are possible!**

# Examinations

- Failure to Appear ➔ Not Passed!!!

- Illness ➔ Medical Certificate is needed!!!

- Max. 3 attempts per exam

- Exam weeks: 12th Feb. – 23rd Feb. 2023

# Questions?



Prof. Dr. Armin Lehmann