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UNIVERSITY OF APPLIED SCIENCES

Study programme

IT ENGINEERING (Master, in English)

Prof. Dr. Sebastian Iwanowski

SYLLABUS IT-ENGINEERING (Master, in English)

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Winter Semester

- Dynamical Systems
  - with mathematical modelings
- Distributed Systems
  - joint class with Informatik
- Workshop Embedded Systems
  - important for Industry 4.0
- Security Management
  - joint class with IT security
- Medical Engineering
  - includes image recognition using machine learning techniques
- Seminar

3. Semester

- Master Thesis

Summer Semester

Choice block 5 of 7 plus Project:

- Algorithmics
  - joint class with Informatik / DSAI (I)
- Cryptography Workshop
  - joint class with IT Security
- Security Engineering
  - joint class with IT Security
- Industrial Internet of Things
  - important for Industry 4.0
- Robotics
  - joint class with Informatik (T) / DSAI (T)
- Technical Optics
  - special class for engineering
- Modern Production Methods
  - special class for engineering, includes laser technology

DIFFERENCES OF MASTER IT-ENGINEERING VS. MASTER INFORMATIK

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More application subjects concerning technics

- Embedded Systems (obligatory)
- Medical Engineering (obligatory)
- Industrial Internet of Things (optional)
- Technical Optics / Laser Technology (optional)

Fewer theoretical subjects

- no Functional Programming
- no Computability and Verification
- no classical Artificial Intelligence Techniques (Machine Learning is included in ITE)

Specialisation IT Security is possible

- 3 joint classes with IT Security programme (15 ECTS credits)
- Project, Seminar, Master Thesis (40 ECTS credits)

ADMISSION IT-ENGINEERING (Master, in English)

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Prerequesites for incomings:

- MINT bachelor degree (80 credits minimum in mathematics, science, technics)
- At least 210 credits in total (30 credits may be made up in Wedel)
- GPA better than 3.0
- At least 20 credits in mathematics (5 in engineering math, 5 in discrete math)
  (10 credits may be made up in Wedel)
- At least 10 credits in programming lab classes (5 in advanced programming)
  (minimum: 1 arbitrary lab course, remainder may be made up in Wedel)

SYLLABUS IT-ENGINEERING (Master, in English)

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Make-up classes for 180 ECTS credit incomings or
incomings not satisfying all prerequesites (e.g. non-IT engineering sciences):

- Discrete Mathematics (from Bachelor 1. semester)
- Fundamental Programming Structures (including Programming Qualifyer)
  (from Bachelor 2. semester)
- Programming Structures Project
- Advanced Programming Features (from Bachelor 3./4. semester)
- Signals and Systems (from Bachelor 3. semester, is acknowledged as math made-up)
- Applications of Artificial Intelligence (survey about all techniques)
  (from Bachelor 3.-5. semester)