Master’s Programme in
Distributed Systems Engineering

Dr.-Ing. Markus Wutzler
dse-info@mailbox.tu-dresden.de

Dresden, October 9, 2019
TU Dresden

- Saxony’s largest university
- 6 profiles, 18 faculties, 5 schools
- 33,506 students
  - 9,736 in engineering (i.e. 29%)
  - 7,808 juniors
- 126 degree programmes
- 3,455 employees (state-funded)
- 2,857 employees (third-party-funded)
- 257 million EUR third-party funds

(numbers as of November 2017)
Introduction to the Master's Programme in Distributed Systems Engineering
Dr.-Ing. Markus Wutzler, Chair of Computer Networks
Dresden, October 09, 2019
Introduction to the Master's Programme in Distributed Systems Engineering
Dr.-Ing. Markus Wutzler, Chair of Computer Networks
Dresden, October 09, 2019
Faculty of Computer Science

Don’t get lost – find your way!
— navigator.tu-dresden.de
— mapbiquitous.inf.tu-dresden.de
## Institutes and Chairs

### Theoretical Computer Science
- Algebraic and Logical Foundations of Computer Science
- Automata Theory
- Foundations of Programming
- Knowledge-Based Systems

### Artificial Intelligence
- Applied Knowledge Representation and Reasoning
- Computational Logic
- Computer Vision
- Scientific Computing for Systems Biology
- Knowledge Representation and Reasoning

### Applied Computer Science
- Human Computer Interaction
- Industrial Communications
- Modeling and Simulation
- Technical Information Systems

### Computer Engineering
- Compiler Architecture
- Computer Construction
- Embedded Systems
- Processor Design
- VLSI Design Systems, Diagnostics and Architecture

### Software and Multimedia Technology
- Computer Graphics and Visualisation
- Didactics of Computer Science
- Media Design
- Multimedia Technology
- Software Technology

### Systems Architecture
- Computer Networks
- Databases
- Operating Systems
- Privacy and Data Security
- Systems Engineering
## Faculty of Computer Science – Students

*(preliminary numbers of winter term 2019/2020)*

<table>
<thead>
<tr>
<th>Program</th>
<th>Junior</th>
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<td>Computer Science</td>
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<td>Diploma</td>
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<tr>
<td>Master of Science</td>
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<td>Media Computer Science</td>
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<tr>
<td>Bachelor of Science</td>
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<td>Distributed Systems Engineering</td>
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<td>Computational Logic</td>
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<td>Bachelor of Science</td>
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<td>Ph.D.</td>
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<td>Total</td>
<td>696</td>
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DSE Master’s Degree Programme
DSE Master’s Degree Programme

2-year full-time master’s degree programme focusing on advanced topics of
— distributed (software) systems engineering with special emphasis on
— secure software for networked and distributed systems
— mobile and ubiquitous computing

https://dse.inf.tu-dresden.de
### Curriculum

<table>
<thead>
<tr>
<th>master's thesis</th>
<th>• thesis (29 CP)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>• defense (1 CP)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>compulsory elective modules</th>
<th>• 48 CP out of 14 compulsory elective modules</th>
</tr>
</thead>
</table>

| mandatory internship       | • 2 placements (each 6 CP) or |
|-----------------------------|• 1 assignment paper (12 CP) |

| mandatory lectures          | • Systems Engineering (9 CP) |
|-----------------------------|• Ubiquitous Systems (7 CP) |
|                             |• Transactional & Secure Platforms (9 CP) |
|                             |• System Design (5 CP) |

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*Introduction to the Master’s Programme in Distributed Systems Engineering*

Dr.-Ing. Markus Wutzler, Chair of Computer Networks

Dresden, October 09, 2019
## Curriculum: Compulsory Elective Subjects

<table>
<thead>
<tr>
<th>#</th>
<th>Module</th>
<th>SWS (L/T/S/P)</th>
<th>Credits</th>
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<tbody>
<tr>
<td>DSE-14-E1</td>
<td>Advanced Security and Cryptography</td>
<td>2 / 2</td>
<td>6</td>
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<td>DSE-14-E2</td>
<td>Wireless Sensor Networks</td>
<td>2 / 0 / 2</td>
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<tr>
<td>DSE-14-E3</td>
<td>Distributed Operating Systems</td>
<td>2 / 1 / 1</td>
<td>6</td>
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<tr>
<td>DSE-14-E4</td>
<td>Component-based Software Engineering</td>
<td>2 / 2</td>
<td>6</td>
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<tr>
<td>DSE-14-E5</td>
<td>Selected Areas of Internet-based Systems</td>
<td>4 / 4</td>
<td>12</td>
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<td>DSE-14-E6</td>
<td>Concurrent and Distributed Systems</td>
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<td>DSE-14-E7</td>
<td>Software Fault Tolerance</td>
<td>2 / 2 / 2 / 4</td>
<td>15</td>
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<td>DSE-14-E8</td>
<td>Microkernel-based Operating Systems</td>
<td>2 / 1</td>
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<td>DSE-14-E9</td>
<td>Real-Time Systems</td>
<td>2 / 1</td>
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<tr>
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<tr>
<td>DSE-14-E11</td>
<td>Principles of Dependable Systems</td>
<td>2 / 2</td>
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<td>DSE-14-E12</td>
<td>Foundations of Computational Logic</td>
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<td>DSE-14-E13</td>
<td>Advanced Topics in Systems Architecture</td>
<td>2 / 2</td>
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*your choice achieve 48 CP*
## Curriculum: Intended Schedule

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Curriculum: Let’s Start!

All mandatory lectures are offered this semester!

DSE-M1
— Systems Engineering I
— Systems Engineering II

Prof. Fetzer

DSE-M2
— Mobile Communication and Mobile Computing
— Distributed Systems

Prof. Schill, Dr. Springer

DSE-M3
— Security and Cryptography I
— Transactional Information Systems

Dr. Köpsell

Prof. Lehner

DSE-M4
— Design-Patterns and Frameworks

Dr. Götz
### Your Timetable for this Semester

<table>
<thead>
<tr>
<th>Time</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
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<tr>
<td>7.30 - 9.00</td>
<td>no lectures</td>
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<tr>
<td>9.20 - 10.50</td>
<td>Tutorial Distributed Systems APB/E023</td>
<td>Lecture Security and Cryptography I APB/E023</td>
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<tr>
<td>13.00 - 14.30</td>
<td>Lecture Transactional Information Systems APB/E010</td>
<td>Tutorial Transactional Information Systems APB/E001</td>
<td>Lecture Mobile Communication and Mobile Computing APB/E023</td>
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<tr>
<td>14.50 - 16.20</td>
<td>Lecture Systems Engineering II APB/E007</td>
<td>Lecture Design Patterns and Frameworks APB/E023</td>
<td>Tutorial Design Patterns and Frameworks HSZ/0101 or WIL/C129</td>
<td>Lecture Distributed Systems APB/E023</td>
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<tr>
<td>16.40 - 18.10</td>
<td>no lectures</td>
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</table>

General Notes
Your Timetable for Other Semesters

https://www.dek.inf.tu-dresden.de/lehre

General Timetable

Winter Semester (winter term)
— October till January
— Exams (written) in February
— Exams (orally) mainly in February / March

Summer Semester (summer term)
— April till July
— Exams (written) in August
— Exams (orally) mainly in August / September

Pay attention to holidays, et cetera!
https://www.tu-dresden.de/studium/im-studium/studienorganisation/studienjahresablauf

Lectures, Seminars, Placements, etc. take place
Monday through Friday

<table>
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<tr>
<th>DS</th>
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<th>To</th>
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<tr>
<td>1</td>
<td>07:30 (am)</td>
<td>09:00 (am)</td>
</tr>
<tr>
<td>2</td>
<td>09:20 (am)</td>
<td>10:50 (am)</td>
</tr>
<tr>
<td>3</td>
<td>11:10 (am)</td>
<td>12:40 (pm)</td>
</tr>
<tr>
<td>4</td>
<td>13:00 (01:00 pm)</td>
<td>14:30 (02:30 pm)</td>
</tr>
<tr>
<td>5</td>
<td>14:50 (02:50 pm)</td>
<td>16:20 (04:20 pm)</td>
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<tr>
<td>6</td>
<td>16:40 (04:40 pm)</td>
<td>18:10 (06:10 pm)</td>
</tr>
<tr>
<td>7</td>
<td>18:30 (06:30 pm)</td>
<td>20:00 (08:00 pm)</td>
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</table>
Terminology: Semesterwochenstunde (SWS)

SWS  Semesterwochenstunde  (Semester Weekly Hour)
1 SWS equals to  1 weekly 45-minute session for 15 weeks (additional 45 minutes of weekly outwork)
usually given for lectures, tutorials, [seminars,] and placements (L/T/[S]/P or German: V/Ü/[S]/P)
e.g.:  Systems Engineering I – 2/2/- or 2/2/0
weekly 90-minute lecture,
weekly 90-minute tutorial,
no placement
Slots are always **90 minutes** (so, double periods)!
Uneven SWS mean fortnightly sessions. Pay attention to the week numbers (even/uneven).
October 14, 2019 is in an uneven week (41st week of the year).
Exams
Enrolment

Some offered lectures, tutorials and placements require mandatory enrolment already to participate.

— Please check the corresponding lecturer’s website for details.
— A common tool for lecture / seminar / etc. enrolment is jExam: www.jexam.de

Most of the offered lectures, tutorials and placements require mandatory enrolment in the corresponding exams.

— Please consult SCIS for enrolments.
Service Centre for International Students

Examination Office for DSE students
- registration to examinations
- administration of exam results
- announces the grades
- issues transcripts of records and confirmation documents

Room: APB 2018
Hours: Tuesday & Wednesday, 9:00-12:00
E-Mail: infscis.dse@mailbox.tu-dresden.de
Web: https://www.inf.tu-dresden.de/index.php?node_id=2728&ln=en

Always bring ID and matriculation certificate! Student ID alone is insufficient.
Exams

Taken either as written or oral exam. Refer to module description or ask lecturer!

register in person at SCIS
- during the registration period (written exam)
- latest two weeks prior to exam (oral exam)

for oral exams:
- ask examiner for available appointments
- go to SCIS and register for the exam
- present SCIS paper-work to examiner and make the actual exam appointment

Cancellation is possible up until
- 3 days before written examinations
- 2 weeks before oral examinations

After cancellation deadline, you must present a sickness certificate to the SCIS issued on the day of examination or before stating you were unable to take the exam.
Exams: What happens if you fail?

Keep calm!

you may repeat a failed exam twice
  — first repetition within one year
  — second repetition at the next possible date
  — only after three failed attempts you will drop out

in case of a second repetition: consult the SCIS immediately!

you may present a sickness certificate if you were sick during an exam, nullifying the failed attempt (needs to be hand-in within three days after the exam)

Careful, you will automatically receive a non-passing grade (5,0) in case of
  — failure to register for repetition in due time
  — no-show without sickness certificate or very good reason (flood, tornado, earthquake, ...)


Beware!

Don’t procrastinate!

— Plan your study!
  The first and last semester are predefined, the others are up to you!
  Use the first term to carefully read the study regulations and choose your modules.
— Contact the Academic Advisory Service better sooner than later.
— Enrol for exams on time. Check the SCIS website for respective announcements.
— Take your exams on time. For instance, take DSE-M1 this winter term, as it is scheduled like this.
— Consult the SCIS in case of a second failed attempt immediately!
— Do not start to write your master’s thesis too late! You’ll receive a non-passing grade if you do not start in time!
## Academic Advisory Services & Help

<table>
<thead>
<tr>
<th>Academic Advisory Services</th>
<th>Service Centre for International Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr.-Ing. Irina Karadschow</td>
<td>Julia Koppenhagen</td>
</tr>
<tr>
<td>Dr.-Ing. André Martin</td>
<td>Room APB 2018</td>
</tr>
<tr>
<td>Dr.-Ing. Markus Wutzler</td>
<td><a href="mailto:infscis.dse@mailbox.tu-dresden.de">infscis.dse@mailbox.tu-dresden.de</a></td>
</tr>
<tr>
<td></td>
<td>+49-351-463-39240</td>
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</tbody>
</table>

Office Hours:
- check the websites
- Tuesday, 9-12 am
- Wednesday, 9-12 am

In any case: write an e-mail first!

Check SCIS website regularly!
Important Contacts

Prof. Christof Fetzer
Chair of Systems Engineering
*Head of DSE Programme*
— Room APB 3104
— christof.fetzer@tu-dresden.de

Prof. Alexander Schill
Chair of Computer Networks
*Chairman of the Examination Board*
— Room APB 3111
— alexander.schill@tu-dresden.de

responsible for application of
— deadline extensions (especially for thesis submission deadline)
— approval of (external) programme achievements
Good to know!

Mailing-List (inf-dse-2019@groups.tu-dresden.de)
— register at https://mailman.zih.tu-dresden.de/groups/listinfo/inf-dse-2019
— important information and news (especially from SCIS)
— ask questions and engage in discussions

International Office
— provides help with all kinds of problems (VISA, government, dormitory, ...)
— good community for international exchange

Re-registration
— re-register with the matriculation office every semester
— pay the semester contribution on time
— without re-registration you will automatically drop-out
Introduction to the Master's Programme in Distributed Systems Engineering
Dr.-Ing. Markus Wutzler, Chair of Computer Networks
Dresden, October 09, 2019
SLUB – Saxonian State and University Library

Central Library (main building):
  — Zellescher Weg 18 (#47a on TUD map)
Departmental Library (‘DrePunct’ building):
  — Zellescher Weg 17 (#47c on TUD map)
registration with
  — online form in advance
  — matriculation certificate
  — passport
service is free for registered students
http://www.slub-dresden.de
IT Services provided by ZIH

**E-Mail**
- E-mail address on semester print-out sheet; in general: firstname(s).lastname(s)@mailbox.tu-dresden.de
- comes with Microsoft Exchange access
- make sure to set-up account with your mail programme, or set-up a forward (instructions on ZIH website), and check the inbox regularly
- important messages from the university are sent to this address only
  ‘I did not receive the E-Mail’ is not a valid excuse if you miss an exam, et cetera!

**Computer Labs** (ground level, west wing)
- personal login and first password on semester print-out sheet
- operating hours of computer labs
  - weekdays: 7a till 9:30p
  - weekend: 10a till 5:30p

**WLAN access** (eduroam)
- you can use your login also for WLAN access on the campus
- and at every institution which joined the eduroam network (worldwide)
Refectories: Breakfast, Lunch & Dinner

You can pay with EC-card or cash, but Emeal is the convenient choice.
- without Emeal you must show your student ID with each purchase in order to receive student discounts!
- deposit of 5 EUR
- registration with
  ✓ passport
  ✓ student ID
  ✓ Emeal certificate (*on semester print-out sheet*)
- several refectories at main campus
  nearest one: Alte Mensa – Mommsenstraße
  (#24a on TUD map)
Extra-curricular Activities

**Information around study and living**
- https://www.study-dresden.com

**Cultural Office** (International Office, TUD)
- excursions, events, meet people
- https://tu-dresden.de/studium/rund-ums-studium/kulturbuero

**Sports** (University Sports Center)
- registration online
  (starts next Tuesday, 9 October)
- http://tu-dresden.de/usz
- small fee per semester

**Buddy Program**
- https://www.aegee-dresden.org/buddy/
WELCOME CITY TOUR ON A DVB TRAM

When?
— Saturday, October 19th, 11am

Who?
— Cultural Office, DVB and the students of the Faculty of Transportation and Traffic Sciences

What?
— discover Dresden on a special tram journey
— ride around various parts of the city and show you several sights and POIs.
— personal insights and tips about places to go to and things to do during the winter term
— after the city tour, possibility to go with the tram to the depot and have a look around.

How much?
— free

Tickets?
— at the Cultural Office, during office hours
— during the Matriculation Ceremony, on Thursday, October 4th.

www.tu-dresden.de/kultur
www.facebook.com/kulturbuero
www.twitter.com/kultur_TUD
German Courses

VHS Basic Course, Level A1
— http://www.vhs-dresden.de/?id=189
— Adult Education Centre Dresden

TUDIAS Basic Course, Level A1
— course fee: starting at 400€ excl. learning material
— next start in January; 80 teaching units; twice per week (5p till 8:15p; 8h per week)
— online registration:
  http://www.tudias.de/deutsch-als-fremdsprache/abendkurse/

TU Dresden – Language Courses for Students
— free courses* for foreign students provided by subdivision of TUDIAS
— you (should) have 4 SWS free budget to attend a language course
— http://lskonline.tu-dresden.de/lskonline/de/100.0
Thank you.

Questions?