Faculty of Computer Science

Master's Programme in 'Distributed Systems Engineering'

Dr.-Ing. Tenshi Hara
tenshi.hara@tu-dresden.de

TU Dresden
(Statistics as of 2014/2015)

- Saxony's largest University

- 6 Profiles, 14 Faculties, 5 Schools

- 36,737 Students
  - 10,588 in Engineering (i.e. 28.8%)
  - 5,852 Juniors

- 126 Degree Programmes

- 8,364 Employees (3,766 on Third-Party Funds)

- 242.4 Mil EUR Third-Party Funds

TU Dresden

Technische Universität Dresden

TU Dresden

University Medical Centre
'Carl Gustav Carus'

Wind Tunnel

Botanical Garten

Main Campus

The Research Network 'DRESDEN-concept e.V.'

Technische Universität Dresden

Fraunhofer-Gesellschaft
Institut für Werkstoff- und Strahltechnik
Institut für Photonische Mikrosysteme
Institut für Keramische Technologien und Systeme
Institut für Elektronenstrahl- und Plasmatechnik

Max-Planck-Gesellschaft
Institut für molekulare Zellbiologie und Genetik
Institut für Physik komplexer Systeme
Institut für Chemische Physik fester Stoffe

Leibniz-Gemeinschaft
Institut für Polymerforschung Dresden
Institut für Festkörper- und Werkstoffforschung Dresden
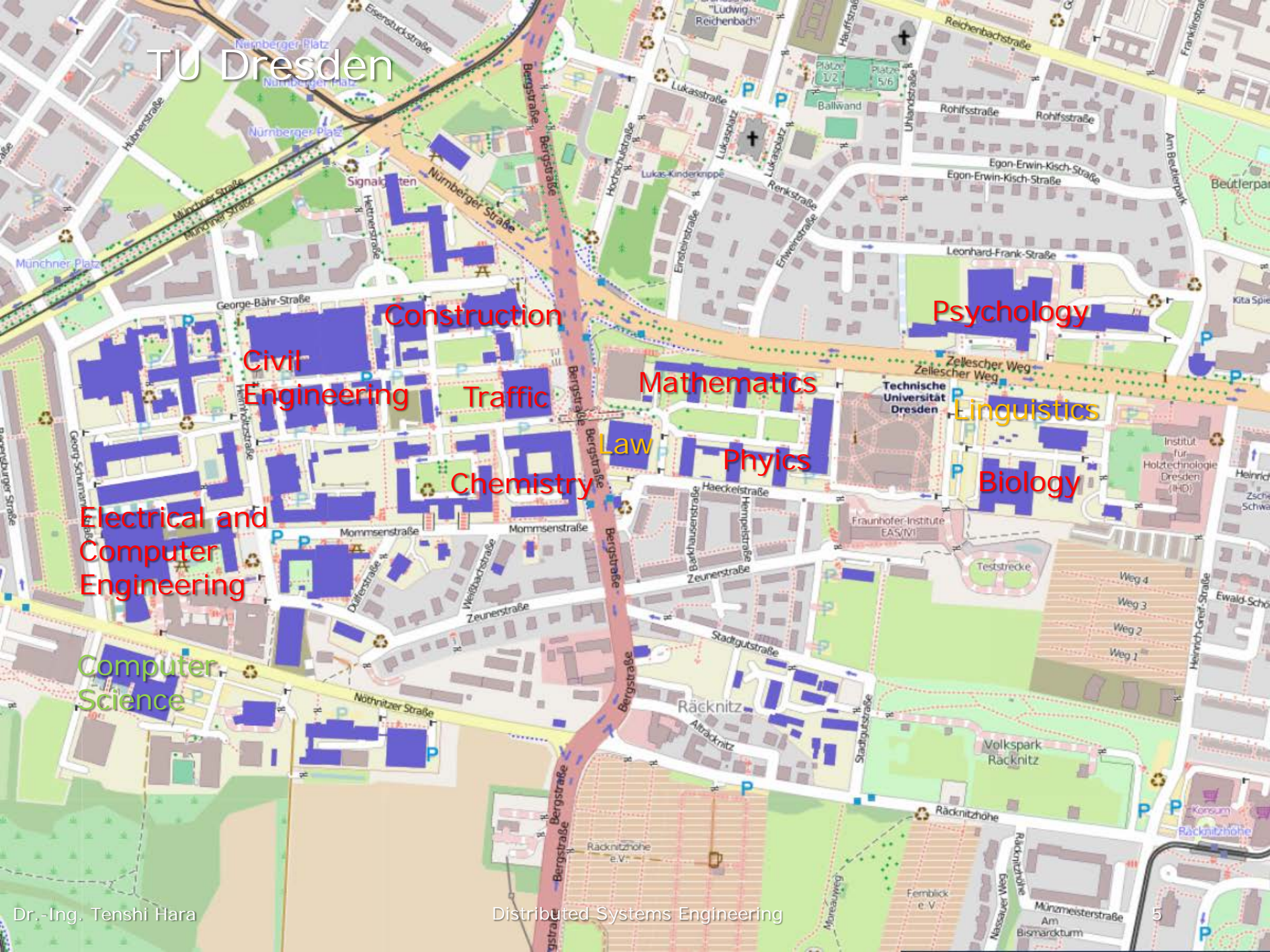Institut für ökologische Raumentwicklung

Helmholtz-Gemeinschaft
Forschungszentrum Dresden-Rossendorf

Museen und Bibliotheken
Staatliche Kunstsammlungen Dresden
Deutsches Hygiene-Museum
Sächsische Landesbibliothek – Staats- und Universitätsbibliothek Dresden

TU Dresden

Construction

Civil Engineering

Traffic

Mathematics

Psychology
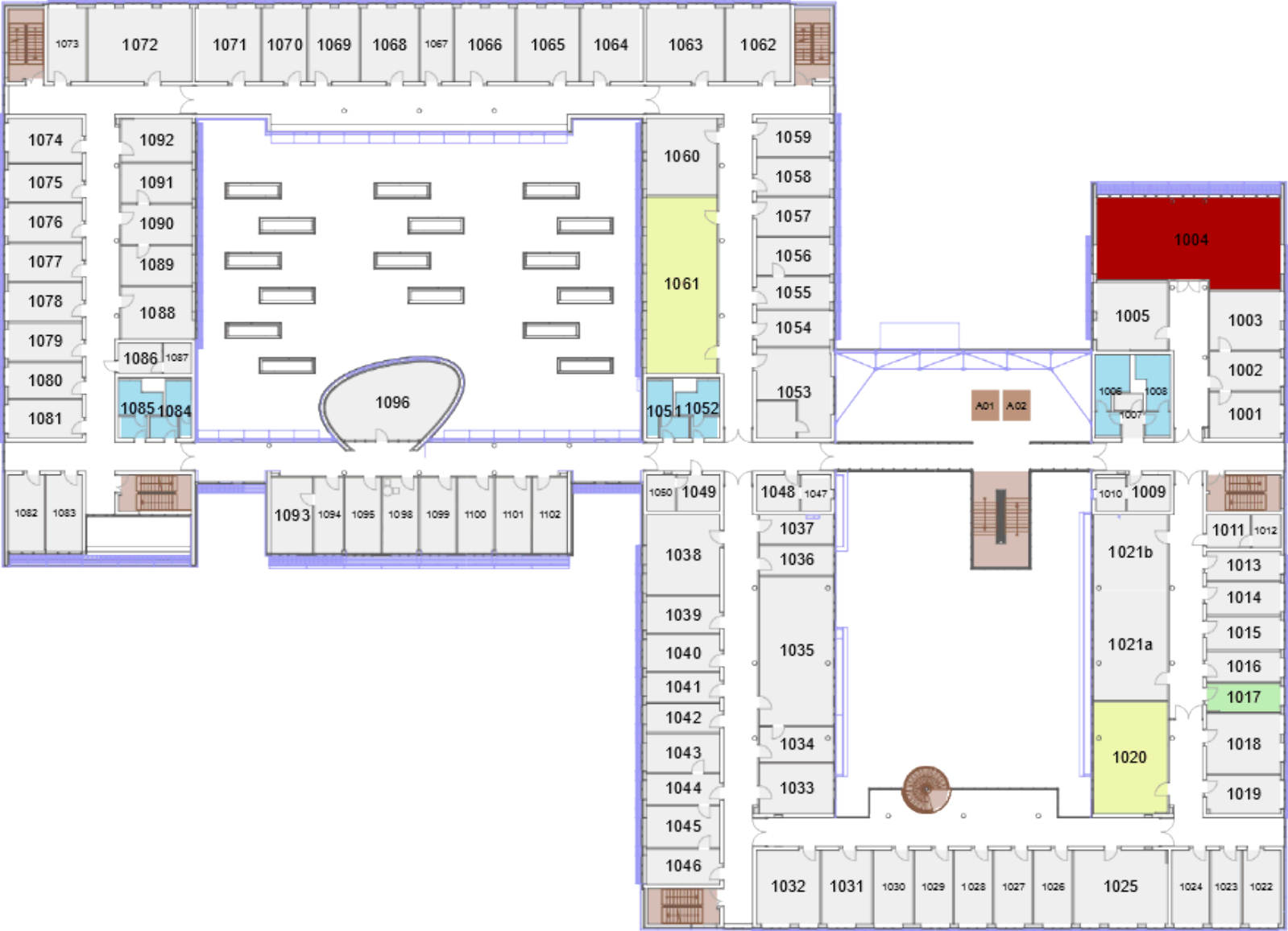
Linguistics

Law

Phyics

Biology

Chemistry

Electrical and Computer Engineering

Computer Science

Faculty of Computer Science

Faculty of Computer Science
(Statistics as of 2014/2015)

- 6 Institutes
- 25 Chairs, 3 Senior-Professorships
- 280 Employees (138 State HR Budget)
- 1,919 Students
- 200+ Research Areas
- ~10.9 Mil EUR Third-Party Funds in 2014
- 211 Doctorate Students 2015
- 26 Doctorate Conferrals 2015

Large-Scale Research Projects

- **cfAED** – 'Centre for Advancing Electronics Dresden'
  - 7 Chairs from Computer Science
  - Budget: Excellence Initiative

- **SFB 912 HAEC** – Highly-adaptive Energy Efficient Computing
  - 7 Chairs and 1 Priv.-Doz. from Computer Science
  - Budget: DFG

- **ResUbic Lab Dresden** – Cyber-Physical Systems
  - 5 Chairs from Computer Science
  - Budget: EU (ESF) and SMWK

- **QuantLA, EPCL, IT4BI, RoSI**
  - 4 structured Ph.D. Programmes
  - financed by DFG, DAAD and EU

Numbers by Degree Programme
(Statistics as of 2015/2016)

		Total	Juniors
Computer Science	**Diploma**	423	81
	Bachelor	401	144
	Master	116	39
Media Computer Science	**Diploma**	56	0
	Bachelor	406	152
	Master	96	24
Teaching Post	**Bachelor**	5	0
	State Exam	113	43
	Master	12	0
Computational Science and Engineering	**Master**	12	8
Computational Logic	**Master**	54	38
Distributed Systems Engineering	**Master**	63	19
Doctorate		108	14
Total		**1,919**	**591**

Institutes and Chairs

Applied Computer Science

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

Artificial Intelligence

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

Software and Multimedia Technology

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

Computer Engineering

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

Systems Architecture

- Computer Networks
- Datenbases
- Operating Systems
- Privacy and Data Security
- Systems Engineering

Theoretical Computer Science

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

DSE Master's Degree Programme

- 2-year full-time programme

- focusing on advanced topics of distributed (software) systems engineering:

  - Specification

  - Design*

  - Analysis

  - Development*

  - Operation

    * special emphasis on secure software for networked and distributed systems

Service Center 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: WE & FR 9:30a till 11:30a

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.

Important contacts

Mr. Prof. Christof Fetzer

Professor of Systems Engineering

DSE Programme Coordinator (Dean)

Room APB/3104

christof.fetzer@tu-dresden.de

+49-351-463-39709

Hours: TU 9a – 10a

Mr. Prof. Alexander Schill

Professor of Computer Networks

Chairman of the Examination Board

Room APB/3111

alexander.schill@tu-dresden.de

+49-351-463-38261

Hours: by appointment

Application of

- deadline extensions (especially for thesis submission deadline)

- third attempt exams (2nd repition)

- aproval of (external) programme achievements

Help during the semester

Ms Dr.-Ing. Irina Karadschow

Ms Claudia Einert

Chair of Systems Engineering

Secretaries to Prof. Fetzer

Room APB/3107

se@mailbox.tu-dresden.de

+49-351-463-39708

Hours: TU 9a – 11a

  TH 1p – 3p

Web:

http://dse.inf.tu-dresden.de

Ms Anja Fischer

Service Center for International Students

Coordinator

Room APB/2018

infscis.dse@mailbox.tu-dresden.de

+49-351-463-39240

Hours: WE & FR 9:30a – 11:30a

Mr Dr.-Ing. Tenshi Hara

Chair of Computer Networks

DSE Studies Advisor

Room APB/3085

tenshi.hara@tu-dresden.de

+49-351-463-38381

Hours: FR 9a – 12p w/o apmt.

  FR 1p – 4p apmts. only

Mandatory Modules

4 mandatory Lecture Series (30 CP)

- Systems Engineering (9 CP)

- Ubiquitous Systems (7 CP)

- Transactional & Secure Platforms (9 CP)

- System Design (5 CP)

1 mandatory Internship (12 CP)

- 2 Complex Practicals (each 6 CP), or

- 1 Assignment Paper (12 CP)

1 mandatory Master Thesis (29 CP + 1 CP)

Elective Modules

14 elective Lecture Series (your pick of 48 CP)

- Advanced Security and Cryptography (6 CP)
- Wireless Sensor Networks (6 CP)
- Distributed Operating Systems (6 CP)
- Component-based Software Engineering (6CP)
- Selected Areas of Internet-based Systems (2x 6 CP out of 4x 6 CP)
- Concurrent and Distributed Systems (2x 6 CP)
- Software Fault Tolerance (2x 6 CP + 3 CP)
- Microkernel-based Oeprating Systems (6 CP)
- Real-Time Systems (6 CP)
- Application Development for Mobile & Ubiquitous Computing (6 CP)
- Principles of Dependable Systems (6 CP + 3 CP)
- Foundations of Computational Logic (2x 4,5 CP)
- Advanced Topics in Systems Architecture (3 CP)
- Advanced Topics in Distrbuted Systems (6 CP)

Recommended Schedule

Semester	DSE-M1	DSE-M2	DSE-M3	DSE-M4	DSE-Int	DSE-E1	DSE-E2	DSE-E3	DSE-E4	DSE-E5	DSE-E6	DSE-E7	DSE-E8	DSE-E9	DSE-E10	DSE-E11	DSE-E12	DSE-E13	DSE-E14	Master Thesis	CP
1st	◇	◇	◇	◇																	30
2nd						◈	◈	◈	◈	◈	◈	◈				◈					30
3rd					◇							◈	◈	◈	◈	◈	◈	◈	◈		30
4th																				◇	30
	42										48									30	120

◇ mandatory module

◈ elective module

This Semester

All mandatory lectures are offered this semester

- DSE-M1
  - Systems Engineering I   Prof. Fetzer
  - Systems Engineering II Prof. Fetzer

- DSE-M2
  - Mobile Communication   Prof. Schill, Dr. Springer,
    and Mobile Computing   PD Dr. Dargie
  - Distributed Systems   Prof. Schill, Dr. Springer, Dr. Braun
  - Transactional   Prof. Lehner, Dr. Hahmann
    Information Systems

- DSE-M3
  - Security and   Prof. Strufe, Dr. Köpsell
    Cryptography I

- DSE-M4
  - Design-Patterns   Prof. Aßmann
    and Frameworks

Period	MO	TU	WE	TH	FR
1		Tutorial *Systems Engineering II* APB/E023			
2		Tutorial *Distributed Systems* APB/E023		Lecture *Security and Cryptography I* APB/E023	
3	Lecture *Systems Engineering I* APB/E023			Lecture *Security and Cryptography I* APB/E023	Tutorial *Systems Engineering I* APB/E023
4	Lecture *Transactional Information Systems* APB/E023	Tutorial *Transactional Information Systems* APB/E001		Lecture *Mobile Communication and Mobile Computing* APB/E023	
5	Lecture *Systems Engineering II* APB/E023	Lecture *Design Patterns and Frameworks* APB/E023	Tutorial *Design Patterns and Frameworks* WIL/C129		
6	Complete time table incl. elective modules: http://web.inf.tu-dresden.de/Fak/w/16/studiengang/studiengang_dse_2014.html			Lecture *Distributed Systems* SCH/0A01	

Time Table

Lectures, Seminars, Practicals, et cetera take place

- October till January   Winter Semester
- April till July   Summer Semester
- Monday through Friday (officially also on Saturday)
    - 1st period   7:30a   till 9a
    - 2nd period   9:20a   till 10:50a
    - 3rd period   11:10a till 12:40p
    - 4th period   1p   till 2:30p
    - 5th period   2:50p   till 4:20p
    - 6th period   4:40p   till 6:10p
    - 7th period (rarely)   6:30p   till 8p

Pay attention to holidays, et cetera!

https://tu-dresden.de/studium/im-studium/studienorganisation/studienjahresablauf

Terminology

SWS   Semesterwochenstunde (Semester Weekly Hour)

1 SWS equals to   1 weekly 45-minute session for 14 weeks
(additional 45 minutes of weekly outwork)

usually given for lectures, tutorials and practicals (V/Ü/P)

e.g.:   Systems Engineering I – 2/2/- or 2/2/0

weekly 90-minute lecture,

weekly 90-minute tutorial,

no practical

Periods are **always 90 minutes**!

Uneven SWS mean fouthnightly sessions. Pay attention to the week numbers (even/uneven).

This week is even (40th week of the year).

Enrollment

Most of the offered lectures, tutorials and practicals require mandatory enrollment.

Please use the online enrollment systems provided by jExam:

https://jexam.inf.tu-dresden.de/de.jexam.web.v4.5/spring/welcome?lang=en

Foreign language courses offered by LSK/TUDIAS
(not for German courses!):

https://lskonline.tu-dresden.de/lskonline/de/102.0.1

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 BEFORE the examination latest
    - three days (written exam)
    - two weeks (oral exam)
- 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

Should you fail an exam

Keep calm!

- you may repeat a failed exam twice
    - first repetition within one year
    - second repetition within the next examination period
    - only after three failed attempts you will drop out
- you need to apply for the second repetition and receive a permit from the examination board
- you may present a sickness certificate if you were ill during an exam, nullifying the failed attempt
  (needs to be hand-in within three days of the exam)

Careful, these automatically lead to non-passing grade (5,0):
- failure to register for repetition in due time
- no-show without sickness certificate or very good reason (flood, tornado, earthquake, ...)

Good to know

Mailing-List (dse2016@ifsr.de)

- register at https://lists.ifsr.de/listinfo/dse2016
- 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 autmatically drop-out

Campus Life

SLUB – 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

- additional services: WLAN, copy machines

- information at: http://www.slub-dresden.de

IT Services provided by ZIH

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

E-mail

- E-mail address on semester print-out sheet; in general: givenname.surname@mailbox.tu-dresden.de

- comes with Unix-mail (IMAP, POP3) and 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!

Refectories

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!

- in cafeterias 3% discount

- 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 Mommsenstr. (#24a on TUD map)

Extra-curricular activities

Information around study and living:

http://www.studydresden.com

Sports

- registration online
  (starts next Tuesday, 11 October)
- http://tu-dresden.de/usz
- small fee per semester

LinkPartner

- find a German Link Partner
- check out:
  http://www.linkpartnerprogramm.de

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: 360€ excl. learning material

- e.g., 7 Nov 16 till 30 Jan 2017 (part 1)
  and 1 Feb 2017 till 10 Apr 2017 (part 2)

- 80 teaching units

- twice per week (5p till 8:15p; 8h per week)

- online registration:
  http://www.tudias.de/en/Deutsch_fuer_Auslaender/Deutsch_fuer_Alltag_und_Beruf/sk_intensivkurse.html

Thank you.

Any questions?