

Technische Universität Braunschweig

Computational Sciences in Engineering

"How to ..." – Intro to CSE

• Annika Kleinwächter, Program Coordinator CSE

Agenda

- Introduction
- Mentor Program
- Direction of Study
- Submission of Forms
- Study Plan
- Semester Schedule
- Misc.



Annika Kleinwächter

- Program Coordinator CSE -

- Questions around the overall program
 - Study plan
 - Exams
 - Going abroad
 - ...
- Academic Counseling
- Internal and External Communication
- Application and Admission





Katharina Klee

- Examination Office CSE -
- Questions around
 - Examinations
 - Examination regulations
 - Study plan (submission)
 - Specialization project and master thesis registration



Computational Sciences in Engineering

Mentor Program

Quick Facts

- Every CSE student has to have a mentor
- Reach out to a Professor of TU Braunschweig and ask them to be your mentor
- First meeting has to take place before the start of the semester

submission: Nov 7

- Mentor helps with choices in study plan
- Mentor has to sign off on
 - study plan
 - specialization
 - mentor form

Without your mentors signature you may not take any exams!





Mentor Sheet

- Complete form **prior** to meeting w/mentor and discuss
 - which classes (compulsory elective / elective) are you planning to take and why?
 - prepare a short abstract of your bachelor thesis (1 page max)
 - prepare to answer the question: "What do you want to do once you graduate?" and "How is CSE / the classes you chose relevant to that goal?"
- Form is only valid with signature of mentor
- Form is due Nov 7

Note: All mentors are aware that you might **switch to another mentor later** on in your studies.

	Technische Universität Braunschweig	Computational Sciences in Engineering
TUNS	sch ^a	Mentor Form CSE
	Information about the mentee (student)	
	Last Name:	-
	First Name:	_
	Student ID/Matricle Number:	Year of Enrollement: 20
	I hereby confirm that I have read and understood the CS Teil der Prüfungsordnung CSE) and the general examinat Prüfungsordnung der TU Braunschweig).	
	Place & Date Student'	s signature
	I hereby certify that I am aware of and accept the guidel	ines for scientific work.
	Place & Date	s signature
	Information about the mentor (professor)	
	Last Name:	
	First Name:	
	Institute:	_
	I agree to be a mentor to the above mentioned student. plan.	We have discussed with their study
	Place & Date	Ventor's signature & Institute's stamp
	Submit to: CSE Office (Beethovenstr. 51, 38106 Braunsch	tweig) Office Hours: MON 10-12





Your Direction of Study Form

Direction of Study Form

- Fill out prior to your meeting w/ your mentor
- It is only valid with the signature of your mentor
- It is due Nov 7

Technische Universität Braunschweig	Computational Sciences in Engineering Direction of Study
Information about the s Last name: First name: Student ID number (Matri	tudent:
I choose the following dire	ection of study for my CSE master program (only check one!):
CSE-CE	Civil Engineering
CSE-ME	Mechanical Engineering
CSE-EE	Electrical Engineering
CSE-MC	Mathematics and Computer Science
	aware of both the CSE examination regulations (Besonderer Teil der e general examination regulations (Allgemeiner Teil der Prüfungs-
Place & Date	Student's signature
I agree with the direction	of study of my mentee.
Place & Date	Mentor's signature & institute's stamp
Submit to: CSE Office (E	Beethovenstr. 51, 38106 Braunschweig); Office Hours: MON 10-12



Submission of Forms



- 1. Fill out respective document with all details & as discussed w/ your mentor
- 2. Send form to mentor for approval via email
- 3. Submit completed form + mentor approval to CSE <u>cse-office@tu-</u> <u>Braunschweig.de</u>

Note: Only completed documents (form + mentor's approval) will be processed.





Your Study Plan

Rules and Regulations to selecting classes

- 6 Compulsory (30 CP), Sem. 1 + 2
- 5 Compulsory Electives (25 CP)
- 4 Electives (20 CP)
- 1 Student Project (15 CP)
- 1 Master Thesis (30 CP)

New Regulations (planned to enter into force Mid Nov)

Intro to CE (compulsory/ 2 credits)

- attendence of 7 lectures of lecture series
- attendance Intercultural training
- either attendance workshop "scientific writing" or company exkursion + report
- only class without a grade

Scientific Software Enineering Lab (compulsory, 5 credits)

έι	echnische Jniversität Braunschwe	ig	Name:Ye	ar of Enrol	iment: 20	Specializatio CM CE EE M
			1 st Semester			30 CP total
CP)			duction to Computational Engineering (4398501)		2 CP (comp.)	
		Four	dations (Compulsory Elective, choose 2)			10 CP (comp. elec.)
			Module Date Signature		Signature	
			Solid Mechanics (4228011)			
	Foundations of		Strukturdynamik GER* (4398441)			
	Natural and Engineering		Fluid Mechanics (4226921)			
² U	Sciences (ENG)	2 modules	Thermodynamics (SS) (4228771)			
			Systemics (SS) (4226981)			
			Pattern Recognition (SS) (2424571)/ (GER*- WS)			
			Computer Network Engineering (2416751)			
			Grundlagen des Mobilfunks GER* (2424491)			
			Elektromagn. Verträglichkeit GER* (2419061)			
	Foundations of		al Differential Equations (PDE) (1294061)			5 CP (comp.)
	Mathematical and Computat.		nary Differential Equations (ODE) (1294051)			5 CP (comp.)
	Sciences (MCS)	Algo	rithms & Programming (Lab) (4398481)			8 CP (comp.)
			2 nd Semester			30 CP total
	1	Com	putational Methods (Compulsory Elective, choose 1)			5 CP (comp. elec.)
	Computational		Module	Date	Signature	
	Methods in		Introduction to FEM (4398471)	Dute	signature	
	Engineering	.p				
	Engineering Sciences (ENG)	pour	hand the second second			
		1 mod.	Introduction to FVM (1294101)			
		Num	erical methods for ordinary and partial differential d	equations (12	94041)	5 CP (comp.)
		Num		equations (12	94041)	5 CP (comp.] 5 CP (comp. elec.)
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	Sciences (ENG) Applied Mathematics and		rical methods for ordinary and partial differential e tiffic Computing (Compulsory Elective, choose 1) Module Parallel/Distributed Computing I (4398511)			
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	Applied Mathematics and Scientific Computing		rical methods for ordinary and partial differential diff: Computing (Computiony Elective, choose 1) Module Parallel/Distributed Computing (14398511) Methods of Uncertainty Analysis and Quandfictation (2404021) Multi-Scale Methods (14398611) Date-Driven Modelling (4333015) Multi-Scale Optimization (VIS) (2515251)			
	Applied Mathematics and Scientific Computing		rical methods for ordinary and partial differential tiffic Computing (Compulsory Elective, choose 1) Module Parallel/Dirthituted Computing (14395511) Methods of Uncertainty Analysis and Quantification (2540421) Multi-Scale Methods (4398611) Date-Driven Modelling (4333015) Multidiscip. Design Optimization (VKS) [2515251) Optimierung 6ER* (VKS (129408)/ SS (1294083)) Inverse Probleme GER* (Irregular) (1201841) Maschinells Lenne mit neuronalen ketzen GER*			
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comp = compulsory comp elec = compulsory elective (choose from pre-set number of classes) elec = elective

Technische Universität Braunschweig



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- 5 Compulsory Electives (25 CP)
- 4 Electives (20 CP)
- 1 Student Project (15 CP)
- 1 Master Thesis (30 CP)

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Description of CSE classes

 Vorlesungsverzeichnis (Course Overview) der TU Braunschweig <u>https://vorlesungen.tu-</u> <u>braunschweig.de/qisserver/rds?state=wtree&search=1&category=veranstaltung.</u> <u>browse&navigationPosition=lectures%2Clectureindex&breadcrumb=lectureindex</u> <u>&topitem=lectures&subitem=lectureindex</u>



Q&As Study Plan



Q: Can I start my classes even though I did not discuss them with my mentor yet? A: Yes.

Q: Is there a minimum or maximum amount of classes that I need to take? A: No, there is not. We recommend to take about 30 CP so that you can graduate after 2 years.

Note that many students graduate after 6 semester. This depends on their personal choices on classes, internships, studies abroad, etc.

Q: When I try to improve my grades which grade will count?

A: The better grade counts.

Q: Not all classes are offered during the winter term. What do I do?

A: You may take classes that planned to be taken in the second semester during your first and vice versa.



Semester Schedule

most CSE classes are in person/ offline

Semester Schedule CSE Masterprogramm

1st Semester - WS 2022/23



	Montag	Dienstag	Mittwoch	Donnerstag	Freitag	
8.00 9.30	Introduction to Computational Engineering SN 19.3	ODE (V) PK 11.4	Elektromagnetische Verträglichkeit (V) TBA	Mustererkennung (Ü) by appointment SN 22.1	Grundlagen des Mobilfunks (Ü) SN 22.1	8.00 9.30
9.45 11.15		PDE (V) RR 58.4	Solid Mechanics (V) PK 11.1	2	Grundlagen des Mobilfunks (V) SN 22.1	9.45 11.15
11.30 13.00	10:00 - 12:30 Fluid Mechanics (VÜ) H003	NS	202.		PDE (Ü) RR 58.4	11.30 13.00
13.15 14.45	Mustererkennung (V) SN 22.1	Elektromagnetische Verträglichkeit (Ü) TBA	Algorithms and Programming (LAB) TBA	Solid Mechanics (Ü) SN 22.1		13.15 14.45
15.00 16.30			Algorithms and Programming (LAB) TBA Clash: Computer Network Engineering (V): HS 86.1 # 3401	ODE (Ů) PK 11.4		15.00 16.30
16.45 18.15		Strukturdynamik (VÜ) Be 51.1, Seminarraum	Computer Network Engineering (Ü) TBA			16.45 18.15
18.30 20.00						18.30 20.00

red = compulsory

V = Vorlesung / Lecture

Ü = Übung / Exercise

TBA: to be announced TBC: to be confirmed

Important: details are due to change. Check online / via Stud.IP to confirm time, date and location





Misc.

Computational Sciences in Engineering

- TU BS Email
 - Official email address; official documents will be sent to university email only
 - -> Your responsibly to check regularly
- Office Hours
 - Thursdays, 10-12
- Regulations, esp. examination regulations







