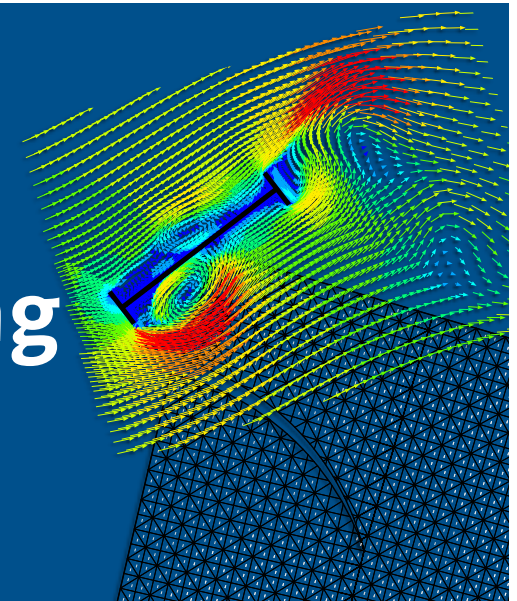
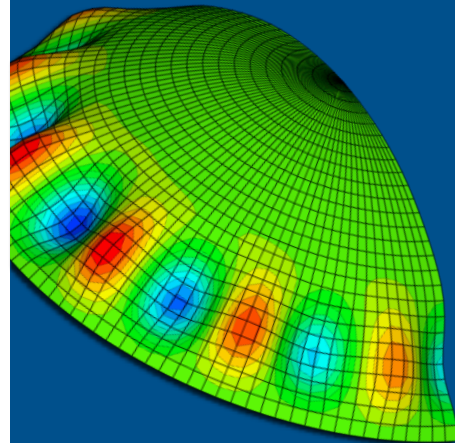




Technische
Universität
Braunschweig

Computational Sciences in Engineering



“How to ...” – Intro to CSE

- Annika Kleinwächter, Programme Coordinator CSE
- Rahav Venkateswaran, Scientific Employee CSE

Agenda



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

Annika Kleinwächter

- Programme Coordinator CSE -



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

Office hours: Thursdays 10:00 – 11:00 (and by appointment)

Rahav Venkateswaran

- Scientific Employee CSE -



- Initial guidance reg. selection of Courses and/or Mentor
- Discussion partner reg. Academics
- Student Project / Master Thesis at Institut für Statik, Room 204

Office hours: Mondays, 10:00 – 12:00 (and by appointment)

Mentor Programme



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: *latest 2 weeks* after semester start)
 - 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 *latest 2 weeks* after the beginning of the semester

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

Technische Universität Braunschweig

Computational Sciences in Engineering

Mentor Form CSE

Information about the mentee (student)

Last Name: _____
First Name: _____
Student ID/Matricule Number: _____ Year of Enrollement: 20__

I hereby confirm that I have read and understood the CSE examination regulations (Besonderer Teil der Prüfungsordnung CSE) and the general examination regulations (Allgemeiner Teil der Prüfungsordnung der TU Braunschweig).

Place & Date

Student's signature

I hereby certify that I am aware of and accept the guidelines for scientific work.

Place & Date

Student's signature

Information about the mentor (professor)

Last Name: _____
First Name: _____
Institute: _____

I agree to be a mentor to the above mentioned student. We have discussed with their study plan.

Place & Date

Mentor's signature & Institute's stamp


Submit to: CSE Office (Beethovenstr. 51, 38106 Braunschweig) 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 *latest 2 weeks* after the beginning of the semester





Direction of Study

Information about the student:
Last name: _____
First name: _____
Student ID number (Matrikelnummer): _____

I choose the following direction 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

I hereby certify that I am aware of both the CSE examination regulations (Besonderer Teil der Prüfungsordnung) and the general examination regulations (Allgemeiner Teil der Prüfungsordnung).

_____ Student's signature

.....

I agree with the direction of study of my mentee.

_____ Mentor's signature & institute's stamp

Submit to: CSE Office (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 cse-office@tu-Braunschweig.de

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

Your Study Plan



Rules and Regulations to selecting classes

- **New examination regulations**
 - 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)

Technische Universität Braunschweig
Study Plan (Examination Regulations 2019)
Name: _____ Matr. Nr.: _____ Enrollment: 20 _____

1 st Semester		30 CP total
Introduction to Computational Engineering		2 CP (comp.)
Foundations (Compulsory Elective)		10 CP (comp. elec.)
Foundations of Natural and Engineering Sciences (ENG)	Module	Date Signature
	Solid Mechanics	
	Strukturdynamik*	
	Fluid Mechanics	
	Thermodynamik (TD)	
	Quemingen (QU)	
	Multiskalenmodellierung*	
	Computer Network Engineering	
	Grundlagen der Mathematik*	
	Mathematische Vorlesungen*	
Foundations of Mathematical and Computat. Sciences (MCS)	Partial Differential Equations (PDE)	5 CP (comp.)
	Ordinary Differential Equations (ODE)	5 CP (comp.)
	Algorithms & Programming (LAI)	8 CP (comp.)
2 nd Semester		30 CP total
Computational Methods (Compulsory Elective)		5 CP (comp. elec.)
Computational Methods in Engineering Sciences (ENG)	Module	Date Signature
	Introduction to FEM	
	Introduction to FVM	
	Numerical methods for ordinary and partial differential equations	5 CP (comp.)
	Scientific Computing (Compulsory Elective)	5 CP (comp. elec.)
Applied Mathematics and Scientific Computing (MCS)	Module	Date Signature
	Optimal (Distributed) Control I	
	Methods of Uncertainty Analysis and Quantification	
	Global Optimization	
	Multidisciplinary Design Optimization (MDO)	
	Optimierung* (WS/SS)	
	Inverse Probleme* (Irregular)	
	Machine Learning mit Deep Neural Networks* (Irregular)	
	Advanced Programming - Lab	
		5 CP (comp.)
Specialization (Elective)		10 CP (comp. elec.)
Specialization (DC-LEC)	Module	Date Signature
	1.	
	2.	

* Language of instruction is German
comp. = compulsory (mandatory classes) comp. elec. = compulsory elective (choose from a pre-set number of classes, see above)
elec. = elective (any class signed off by mentor)

Description of CSE classes

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

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



Semester Schedule CSE Masterporgramm 1st Semester - WS 2019/2020



	Montag	Dienstag	Mittwoch	Donnerstag	Freitag	
8.00 9.30	Introduction to Computational Engineering BE 51.1	PDE (V) MS 3.3	Elektromagnetische Verträglichkeit (V) PK 4.1		Grundlagen des Mobilfunks (Ü) SN 22.1	8.00 9.30
9.45 11.15	10.00-11.30 Fluid Mechanics (VÜ) TBA	ODE (V) MS 3.3			Grundlagen des Mobilfunks (V) SN 22.1	9.45 11.15
11.30 13.00	11.45-12.30 Fluid Mechanics (VÜ) TBA				PDE (Ü) PK 4.7	11.30 13.00
13.15 14.45	Mustererkennung (V) SN 22.2	Elektromagnetische Verträglichkeit (Ü) PK 4.1	Algorithms and Programming (LAB) CIP-Pool, Okerhochhaus, Pockelsstrasse 3, 2OG	Solid Mechanics (V) Okerhochhaus, Pockelsstr. 3, EG, Seminarraum		13.15 14.45
15.00 16.30	Computer Network (V) HS 66.1		Algorithms and Programming (LAB) CIP-Pool, Okerhochhaus, Pockelsstrasse 3, 2OG	Solid Mechanics (Ü) Okerhochhaus, Pockelsstr. 3, EG, Seminarraum	ODE (Ü) PK 3.3	15.00 16.30
16.45 18.15	Computer Network (V) HS 66.1	Strukturdynamik (V) BE 51.1				16.45 18.15
18.30 20.00		Strukturdynamik (Ü) BE 51.1				18.30 20.00

red = compulsory

V = Vorlesung / Lecture

Ü = Übung / Exercise

Important: locations are due to change. Check online / via Stud.IP to confirm

Misc.



- TU BS Email
 - Official email address; official documents will be sent to university email only
 - > Your responsibly to check regularly
- Office Hours
 - Please note that the Office Hours are Thursdays, 10-11 (<https://webconf.tu-bs.de/ann-7jv-4zn>; password: 251080) and by appointment
 - Please reach out to the office to discuss any issues.
- Punctuality
- Regulations, esp. examination regulations
- Women and Men: Roles