Exclosure to Subject Specific Regulations
from 25.07.2018
for Bachelor-Programme Computer Science
at TUHH
Programme Director: Prof. Karl-Heinz Zimmermann
Total: 180 CP
Number of Specilisations to choose: 3

# Course Scheme Bachelor Computer Science (CSBS)

Consolidated Version
for Study Cohort: WiSe20/21
en_head_sda
and Approval of Chair from: 19.05.2021
Replaces Version from: 18.03.2020
In Force on: 01.10.2021
Out of Force on: 31.03.2025

Information regarding the lectures are available in the TUHH modul manuals as well as in the course catalogue.

| Module | | | | | | | Examination | | | Course Work | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Re-com. Term | Module Name (German / English) | Language | ModuleResponsability | Institute | C/EC (1) | CM/ OM (2) | CP (4) | Grade | Exami-nation Form(3) | Compulsory | Course Work Type | Bonus (in %) |
| **Core Qualification** Compulsory Courses: 126 LP Optional Courses: 0 LP | | | | | | | | | | | | |
| 1 | Diskrete Algebraische Strukturen / Discrete Algebraic Structures | DE / EN | Prof. Zimmermann | E-13 | C | CM | 6 | Y | KL | | | |
| 1 | Funktionales Programmieren / Functional Programming | EN | Prof. Schupp | E-16 | C | CM | 6 | Y | KL | Y | ÜA | 15 |
| 1 | Lineare Algebra / Linear Algebra | EN | Prof. Ruprecht | E-10 | C | CM | 8 | Y | KL | | | |
| 1 | Prozedurale Programmierung / Procedural Programming | DE | Prof. Rump | E-19 | C | CM | 6 | Y | KL | | | |
| 2 | Automatentheorie und Formale Sprachen / Automata Theory and Formal Languages | EN | Prof. Knopp | E-5 | C | CM | 6 | Y | KL | | | |
| 2 | Grundlagen der Betriebswirtschaftslehre / Foundations of Management | DE | Prof. Ihl | W-11 | C | CM | 6 | Y | FFA | | | |
| 2 | Mathematische Analysis / Mathematical Analysis | EN | Prof. Ruprecht | E-10 | C | CM | 8 | Y | KL | | | |
| 2 | Programmierparadigmen / Programming Paradigms | DE / EN | NN | SD-E | C | CM | 6 | Y | KL | | | |
| 3 | Algorithmen und Datenstrukturen / Algorithms and Data Structures | DE / EN | Prof. Mnich | E-11 | C | CM | 6 | Y | KL | | | |
| 3 | Mathematik III (EN) / Mathematics III (EN) | EN | Prof. Taraz | 0-UNIHH-M | C | CM | 8 | Y | KL | | | |
| 3 | Rechnernetze und Internet-Sicherheit / Computernetworks and Internet Security | EN | Prof. Timm-Giel | E-4 | C | CM | 6 | Y | KL | | | |
| 3 | Technische Informatik / Computer Engineering | DE / EN | Prof. Falk | E-13 | C | CM | 6 | Y | KL | Y | ÜA | 10 |
| 4 | Berechenbarkeit und Komplexität / Computability and Complexity Theory | DE / EN | Prof. Zimmermann | E-13 | C | CM | 6 | Y | KL | | | |
| 4 | Graphentheorie und Optimierung / Graph Theory and Optimization | DE / EN | Prof. Taraz | E-10 | C | CM | 6 | Y | KL | | | |

| | Module | | | | | | | Examination | | | Course Work | | |
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| | 4 | Software-Engineering / Software Engineering | EN | Prof. Schupp | E-16 | C | CM | 6 | Y | KL | Y | ÜA | 15 |
| | 4 | Stochastik / Stochastics | DE / EN | Prof. Schulte | E-10 | C | CM | 6 | Y | KL | | | |
| | 5 | Seminare Informatik / Seminars Computer Science | DE / EN | Prof. Zimmermann | SD-E | C | CM | 6 | N | RE | | | |
| | 5 | Software-Fachpraktikum / Software Industrial Internship | | Prof. Zimmermann | SD-E | C | CM | 6 | N | SA lt. FPrO | | | |
| | 5 | Ethik in der Informationstechnologie / Ethics in Information Technology | DE / EN | NN | SD-W | EC | CM | 6 | Y | FFA | | | |
| | 6 | Signale und Systeme / Signals and Systems | DE / EN | Prof. Bauch | E-8 | C | CM | 6 | Y | KL | | | |
| | 1-6 | Nichttechnische Angebote im Bachelor / Non-technical Courses for Bachelors | DE / EN | Richter | 0-TUHH | C | OM | 6 | Selection out of seperatly published Catalogue | | | | |
| | | | | | | | | | | | | | |
| **Specialisation I. Computer and Software Engineering** Compulsory Courses: 0 LP Optional Courses: 18 LP | | | | | | | | | | | | | |
| | 3 | Datenbanken / Databases | EN | Prof. Schulte | E-19 | EC | CM | 6 | Y | KL | | | |
| | 4 | Betriebssysteme / Operating Systems | DE | Prof. Turau | E-17 | EC | CM | 6 | Y | KL | | | |
| | 4 | Wissenschaftliche Programmierung / Scientific Programming | DE / EN | Prof. Knopp | E-5 | EC | CM | 6 | Y | KL | | | |
| | 5 | Einführung in die Informationssicherheit / Introduction to Information Security | EN | Prof. Scandariato | E-22 | EC | CM | 6 | Y | KL | | | |
| | 5 | Rechnerarchitektur / Computer Architecture | DE / EN | Prof. Falk | E-13 | EC | CM | 6 | Y | KL | N | FFST | 15 |
| | 5 | Verteilte Systeme / Distributed Systems | DE | Prof. Turau | E-17 | EC | CM | 6 | Y | KL | | | |
| | 6 | Compilerbau / Compiler Construction | EN | Prof. Schupp | E-16 | EC | CM | 6 | Y | FFA | | | |
| | 6 | Eingebettete Systeme / Embedded Systems | EN | Prof. Falk | E-13 | EC | CM | 6 | Y | KL | Y | FFST | 10 |
| | 6 | Softwareentwicklung / Software Development | EN | Prof. Schupp | E-16 | EC | CM | 6 | Y | FFA | | | |
| | | | | | | | | | | | | | |
| **Specialisation II. Mathematics and Engineering Science** Compulsory Courses: 0 LP Optional Courses: 12 LP | | | | | | | | | | | | | |
| | 3 | Numerische Mathematik I / Numerical Mathematics I | EN | Prof. Le Borne | E-10 | EC | CM | 6 | Y | KL | | | |
| | 4 | Mathematik IV (EN) / Mathematics IV (EN) | EN | Prof. Taraz | 0-UNIHH-M | EC | CM | 6 | Y | KL | | | |
| | 5 | Kombinatorische Strukturen und Algorithmen / Combinatorial Structures and Algorithms | DE / EN | Prof. Taraz | E-10 | EC | CM | 6 | Y | MP | | | |
| | 5 | Quantenmechanik für Studierende der Ingenieurswissenschaften / Quantum Mechanics for Engineers | DE | Prof. Hansen | 0-UNIHH | EC | CM | 6 | Y | MP | N | SA | 0 |
| | 5 | Rechnergestützte Geometrie / Computational Geometry | DE | Dr. Batra | E-19 | EC | CM | 6 | Y | KL | | | |
| | 5 | Statistik / Statistics (lt. letzter PO Fortgeschrittene Stochastik) | DE / EN | Prof. Schulte | E-10 | EC | CM | 6 | Y | KL | | | |
| | 6 | Algebraische Methoden in der Regelungstechnik / Algebra and Control | DE / EN | Dr. Batra | E-19 | EC | CM | 6 | Y | MP | | | |

| Module | | | | | | | Examination | | | Course Work | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| 6 | Einführung in Medizintechnische Systeme / Introduction into Medical Technology and Systems | DE | Prof. Schlaefer | E-1 | EC | CM | 6 | Y | KL | Y | SA | 10 |
| | | | | | | | | | | Y | RE | 10 |
| 6 | Labor Cyber-Physical Systems / Lab Cyber-Physical Systems | DE / EN | Prof. Falk | E-13 | EC | CM | 6 | Y | SA | | | |
| 6 | Löser für schwachbesetzte lineare Gleichungssysteme / Solvers for Sparse Linear Systems | EN | Prof. Le Borne | E-10 | EC | CM | 6 | Y | MP | | | |
| **Specialisation III. Subject Specific Focus** Compulsory Courses: 0 LP Optional Courses: 12 LP | | | | | | | | | | | | |
| 5 | Technischer Ergänzungskurs I für CSBS / Technical Complementary Course I for CSBS | | Prof. Zimmermann | SD-E | EC | OM | 6 | according to Subject Specific Regulations | | | | |
| 6 | Technischer Ergänzungskurs II für CSBS / Technical Complementary Course II for CSBS | | Prof. Zimmermann | SD-E | EC | OM | 6 | according to Subject Specific Regulations | | | | |
| **Thesis** Compulsory Courses: 12 LP Optional Courses: 0 LP | | | | | | | | | | | | |
| 6 | Bachelorarbeit / Bachelor Thesis | | Professoren der TUHH | 0-TUHH | C | CM | 12 | Y | AB | | | |

Explanation:

[1]C=Compulsory, EC=Elective Compulsory
[2]CM=Compulsory Defined Module, OM=Optional Defined Module
[3]KL=Written exam, SA=Written elaboration, FFA=Subject theoretical and practical work, FFST=Subject theoretical and practical work, MP=Oral exam, RE=Presentation, ÜA=Excercises, AB=Thesis, SA lt. FPrO=Written elaboration (accord. to Internship Regulations)
[4]CP=Credit Points
[5]VL=Lecture, SE=Seminar, GÜ=Recitation Section (small), PBL=Project-/problem-based Learning, PR=Practical Course, PS=Project Seminar, HÜ=Recitation Section (large)
[6]DE=German, EN=English, DE/EN=German and English
[7]SWS=Contact hours