Vertiefung Digital Health | Vertiefung Digital Environment | Vertiefung Digital Labs and Production | Wahlpflichtmodule

6. Semester

- Ethics and Law – 2 ECTS
- Bachelorarbeit – 16 ECTS
- Digital Biomarkers – 2 ECTS
- Computational Modelling in Environmental Science – 4 ECTS
- Smart Labs – 2 ECTS
- Bioinformatics 2 – 2 ECTS
- Digital Molecule Design – 2 ECTS
- Digital Food Processing 2 – 2 ECTS
- Ecological and Energy Engineering – 4 ECTS
- Industrial Systems – 2 ECTS
- Biostatistics and Epidemiology – 4 ECTS
- Spatio-temporal Data Science – 2 ECTS
- Smart Production – 4 ECTS
- Integrated Omics – 2 ECTS
- Laboratory Informatics – 2 ECTS
- Data Science in Health – 4 ECTS
- Communication and Collaboration in Environmental Science – 2 ECTS

Spezialisierung

5. Semester

- Economy and Entrepreneurship – 4 ECTS
- OS and Infrastructure – 4 ECTS
- Projektarbeit 2 – 8 ECTS
- Clinical Data Processing – 4 ECTS
- GISc and Geodatabases – 4 ECTS
- Bioprocessing and Modelling – 2 ECTS
- Bioinformatics 1 – 2 ECTS
- Chemometrics – 2 ECTS
- Digital Food Processing 1 – 4 ECTS
- Fluid Dynamics – 2 ECTS
- Optimisation and High Performance Computing – 4 ECTS
- Biomedical Laboratory Diagnostics – 2 ECTS
- Environmental Systems 2 – 2 ECTS
- Process Engineering and Data 2 – 4 ECTS
- Image Processing for Remote Sensing – 2 ECTS
- Molecular Imaging – 2 ECTS
- Advanced Environmental Statistics – 2 ECTS

Spezialisierung

4. Semester

- Data and Society – 2 ECTS
- Modelling of Complex Systems – 2 ECTS
- Project-oriented Digital Storytelling and Visualisation – 4 ECTS
- Projektarbeit 1 – Praktische Anwendung – 6 ECTS
- Human Anatomy and Pathophysiology – 4 ECTS
- Applied Environmental Statistics – 2 ECTS
- Process Engineering and Data 1 – 4 ECTS
- Genomics – 2 ECTS
- Remote Sensing and Geodata Acquisition – 2 ECTS
- Microbiology – 2 ECTS
- Neural Networks – 4 ECTS
- Image and Signal Processing – 4 ECTS
- Biomedical Sensors and Imaging – 2 ECTS
- Environmental Systems 1 – 4 ECTS
- Sensors and Measurements – 2 ECTS
- Virtuelle Hochschule – max. 6 ECTS
- External Effort – max. 6 ECTS

Spezialisierung

3. Semester

- Mathematische Modelle und Analyse – 4 ECTS
- Datenbanken – 4 ECTS
- Maschinelles Lernen – 4 ECTS
- Statistische Modellierung und Simulation – 2 ECTS
- Data Engineering – 4 ECTS

Life Sciences Datalab – 12 ECTS

- Life Sciences Datalab - Praktika – 8 ECTS
- Life Sciences Datalab - Methoden und Techniken – 4 ECTS

Grundlagen

2. Semester

- Systeme und Modelle der Physik – 4 ECTS
- Statistik und Wahrscheinlichkeit – 4 ECTS
- Numerische Grundlagen der Data Science – 4 ECTS
- Versuchsplanung und Auswertung – 4 ECTS
- Systeme der Biologie – 4 ECTS
- Englisch 2 – 2 ECTS
- Gesellschaftlicher Kontext und Sprache 2 – 2 ECTS
- Datenzentriertes Programmieren – 2 ECTS
- Organische Chemie – 4 ECTS

Grundlagen

1. Semester

- Analysis und Algebra – 6 ECTS
- Daten und Information – 4 ECTS
- Programmieren – 4 ECTS
- Physical Computing in Life Sciences – 4 ECTS
- Grundlagen Biologie und Technik – 4 ECTS
- Englisch 1 – 2 ECTS
- Gesellschaftlicher Kontext und Sprache 1 – 2 ECTS
- Anorganische Chemie – 4 ECTS

Grundlagen

- Grundlagen und Kontext – 38 ECTS
- Data Science und Computation – 46 ECTS
- Projekte und Labs – 46 ECTS
- Digital Life Sciences inkl. Vertiefungen und Wahlpflichtmodulen – 50 ECTS
  - Minor Bioinformatics
  - Minor Food Processing
  - Minor Digital Molecules
  - Minor Image Processing
  - Minor Ecology and Geodata Processing