

Exemplary plan of studies

To be completed: 138 CP in the compulsory area (17 compulsory modules) as well as 30 CP from the elective modules "Connectors" (choice of 5 modules from 15) and 12 CP from the elective modules "Methods" (choice of 2 modules from 15).

| 1st Semester (Winter) | | | | | |
|-----------------------|-------------------------------------|------|-------------------|----|----------|
| Module | Course | SHPW | Examination | CP | Total CP |
| DAT-B-DATA.1 | L Introduction to Data Science | 5 | | 5 | 12 |
| DAT-B-DATA.2 | E Data Science A | 5 | written exam | 5 | |
| DAT-B-DATA.3 | E Data Science B | 2 | | 2 | |
| DAT-B-PROG.1 | L Programming I | 2 | written exam | 4 | 9 |
| DAT-B-PROG.2 | E Programming I | 2 | | 2 | |
| DAT-B-PROG.3 | L Developer Skills | 1 | written exam | 1 | |
| DAT-B-PROG.4 | E Developer Skills | 2 | | 2 | |
| INF-BSc-P06.1 | L Foundations of Mathematics (FIDS) | 1 | written exam | 2 | 6 |
| INF-BSc-P06.2 | E Foundations of Mathematics (FIDS) | 1 | course exercises | 1 | |
| INF-BSc-P06.3 | L Linear Algebra I (FIDS) | 1 | written exam | 2 | |
| INF-BSc-P06.4 | E Linear Algebra I (FIDS) | 1 | course exercises | 1 | |
| DAT-B-UNIV | Elective Studies | | depends on course | | 30 |

| 2nd Semester (Summer) | | | | | |
|-----------------------|----------------------------------|------|----------------------|----|----------|
| Module | Course | SHPW | Examination | CP | Total CP |
| DAT-B-PROB.1 | L Data Science 1 (Probability) | 2 | written exam | 3 | 6 |
| DAT-B-PROB.2 | E Data Science 1 (Probability) | 2 | | 3 | |
| INF-BSc-P08.1 | L Algorithms and Data Structures | 2 | written exam | 4 | 6 |
| INF-BSc-P08.2 | E Algorithms and Data Structures | 2 | | 2 | |
| INF-BSc-P09.1 | L Databases I | 2 | written exam | 4 | 6 |
| INF-BSc-P09.2 | E Databases I | 2 | | 2 | |
| DAT-B-UNIV | Elective Studies | | depends on course | | 30 |
| DAT-B-CON-GENOM.1 | L Genomics & Bioinformatics | 2 | written or oral exam | 3 | 6 |
| DAT-B-CON-GENOM.2 | E Genomics & Bioinformatics | 2 | | 3 | |

| 3rd Semester (Winter) | | | | | |
|-----------------------|------------------------------|------|----------------------|----|----------|
| Module | Course | SHPW | Examination | CP | Total CP |
| DAT-B-INFER.1 | L Data Science 2 (Inference) | 2 | written exam | 3 | 6 |
| DAT-B-INFER.2 | E Data Science 2 (Inference) | 2 | | 3 | |
| DAT-B-DE.1 | L Data Engineering | 2 | written or oral exam | 4 | 6 |
| DAT-B-DE.2 | E Data Engineering | 2 | | 2 | |
| INF-BSc-P14.1 | L Linear Algebra II (FIDS) | 1 | written exam | 2 | 6 |
| INF-BSc-P14.2 | E Linear Algebra II (FIDS) | 1 | course exercises | 1 | |
| INF-BSc-P14.3 | L Calculus I (FIDS) | 1 | written exam | 2 | |
| INF-BSc-P14.4 | E Calculus I (FIDS) | 1 | course exercises | 1 | |
| DAT-B-CON-ONCO.1 | L Computational Oncology | 2 | written or oral exam | 3 | 6 |
| DAT-B-CON-ONCO.2 | E Computational Oncology | 2 | | 3 | |
| INF-BSc-P11.1 | L Software Engineering | 2 | written exam | 4 | 6 |
| INF-BSc-P11.2 | E Software Engineering | 2 | | 2 | |

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| 4th Semester (Summer) | | | | | |
|-----------------------|-------------------------------------|------|----------------------|----|----------|
| Module | Course | SHPW | Examination | CP | Total CP |
| DAT-B-ML.1 | L Machine Learning | 4 | written exam | 5 | 10 |
| DAT-B-ML.2 | E Machine Learning | 4 | | 5 | |
| DAT-B-DUD.1 | L Data Security and Data Protection | 2 | written exam | 3 | 6 |
| DAT-B-DUD.2 | E Data Security and Data Protection | 2 | | 3 | |
| INF-BSc-P16.1 | L Calculus II (FIDS) | 1 | written exam | 2 | 6 |
| INF-BSc-P16.2 | E Calculus II (FIDS) | 1 | course exercises | 1 | |
| INF-BSc-P16.3 | L Numerics (FIDS) | 1 | written exam | 2 | |
| INF-BSc-P16.4 | E Numerics (FIDS) | 1 | course exercises | 1 | |
| DAT-B-UNIV | Elective Studies | | depends on course | | |
| DAT-B-CON-TRIALS.1 | L Clinical Studies | 2 | written or oral exam | 3 | 6 |
| DAT-B-CON-TRIALS.2 | E Clinical Studies | 2 | | 3 | |

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B.Sc. Data Science

SHPW = semester hours per week

CP = credit points

L = lecture

E = exercise

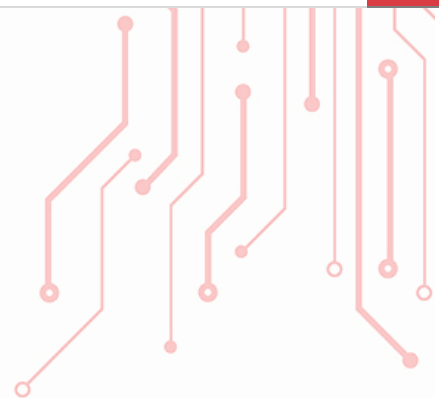
S = seminar

■ **elective module**



| 5th Semester (Winter) | | | | | | |
|-----------------------|----------------------------------|------|-----------------------------------|----|----------|----|
| Module | Course | SHPW | Examination | CP | Total CP | |
| DAT-B-MODEL.1 | L Data Science 3 Modeling | 2 | written exam | 3 | 6 | 30 |
| DAT-B-MODEL.2 | E Data Science 3 Modeling | 2 | | | | |
| DAT-B-ETHICS.1 | S Being a Data Scientist | 2 | talk and moderation of discussion | 5 | 5 | |
| DAT-B-SELPACED.1a | S Self Paced Research | 1 | documentation of the project | 10 | 12 | |
| DAT-B-SELPACED.1b | S Self Paced Research | 2 | talk | 2 | | |
| DAT-B-UNIV | Elective Studies | | depends on course | | | |
| DAT-B-CON-NLE1.1 | L Natural Language Engineering 1 | 2 | written or oral exam | 4 | 6 | |
| DAT-B-CON-NLE1.2 | E Natural Language Engineering 1 | 2 | | | | |

| 6th Semester (Summer) | | | | | | |
|-----------------------|----------------------|------|----------------------|----|----------|----|
| Module | Course | SHPW | Examination | CP | Total CP | |
| DAT-B-UNIV | Elective Studies | | depends on course | | | 30 |
| DAT-B-THESIS.1 | L Scientific Writing | 1 | | 1 | 14 | |
| DAT-B-THESIS.2 | E Scientific Writing | 1 | | 1 | | |
| DAT-B-THESIS.MP | Bachelor's Thesis | | Bachelor's Thesis | 12 | | |
| DAT-B-PROCESS | L Process Science | 2 | written or oral exam | 3 | 6 | |
| DAT-B-PROCESS | E Process Science | 2 | | | | |
| WI-BSc-IBIS-M06 | L Explainable AI | 2 | written exam | 3 | 6 | |
| WI-BSc-IBIS-M06 | E Explainable AI | 2 | | | | |



B.Sc. Data Science

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■ **elective module**