



Bern University
of Applied Sciences

BSc Data Engineering curriculum Full-time

Status in July 2026

1 st semester	2 nd semester	3 rd semester	4 th semester	5 th semester	6 th semester
Project and Training 1 BTI3001 – 6 ECTS	Project and Training 2 BTI3011 – 6 ECTS	Project and Training 3 BTI3023 – 6 ECTS	Project 1 BTI3031 – 6 ECTS	Project 2 BTI3041 – 6 ECTS	Bachelor-Thesis BTI3051 – 12 ECTS
Programming 1 with Java BT1001 – 4 ECTS or Kotlin BT1002 – 4 ECTS	Programming 2 with Java BT1011 – 4 ECTS or Kotlin BT1012 – 4 ECTS	Introduction to IT-Security BTI1321 – 2 ECTS Software Engineering BTI1121 – 4 ECTS	Specialisation 1.1 BTI4x01 – 4 ECTS	Specialisation 2.1 BTI4x03 – 4 ECTS	
Computing Infrastructure BTI1022 – 2 ECTS	Programming with Python BTI1013 – 4 ECTS		Specialisation 1.2 BTI4x02 – 4 ECTS	Specialisation 2.2 BTI4x04 – 4 ECTS	
Compulsory-elective module BTI1111 – 2 ECTS		Data Engineering Fundamentals 2 BTI1032 – 4 ECTS			
Databases BTI1311 – 4 ECTS	Data Engineering Fundamentals 1 BTI1031 – 4 ECTS		Connected Computing: Dev-Ops and Cloud BTI1004 – 4 ECTS	Interaction Design BTI1101 – 2 ECTS	
		Machine Learning Foundations 3 BTI1043 – 4 ECTS		Information Technology Law BTI1211 – 2 ECTS	Specialisation 3.1 BTI4x05 – 4 ECTS
Machine Learning Foundations 1 BTI1041 – 4 ECTS	Machine Learning Foundations 2 BTI1042 – 4 ECTS		Web Programming with Python BTI1302 – 4 ECTS	Specialist optional module 3 2 ECTS	Specialisation 3.2 BTI4x06 – 4 ECTS
Linear Algebra BZG1167 – 4 ECTS	Analysis for Data Engineering BZG1168 – 4 ECTS	Discrete Mathematics 2 BZG1165 – 4 ECTS		Specialist optional module 4 2 ECTS	Specialist optional module 6 2 ECTS
		Applied Statistics BZG1166 – 4 ECTS	Specialist optional module 1 2 ECTS	Specialist optional module 5 2 ECTS	Specialist optional module 7 2 ECTS
Communications 1 BZG3110 – 2 ECTS	Probability BZG1169 – 2 ECTS		Specialist optional module 2 2 ECTS	Compulsory-elective module 2 2 ECTS	Specialist optional module 8 2 ECTS
Special Week 1 BTI5204 – 2 ECTS	Communications 2 BZG3111 – 2 ECTS	English 1 BZG34x1 – 2 ECTS	Compulsory-elective module 1 2 ECTS	Special Week 3 BTI5208 – 2 ECTS	Compulsory-elective module 3 2 ECTS
		English 2 BZG34x2 – 2 ECTS			Compulsory-elective module 4 2 ECTS
		Special Week 2 BTI5207 – 2 ECTS			

Module subjects

- Project / Internship (42 ECTS)
- Specialist modules (52 ECTS)
- Specialist optional modules (18 ECTS)
- Specialisation modules (24 ECTS)
 - Applied Data Analytics
 - Machine Learning Engineering
- Mathematics modules (20 ECTS)
- Communication (8 ECTS)
- Special Weeks / interdisciplinary modules (16 ECTS)

The studies take place in Biel.
The programme can be undertaken in German/English.

Subject to change.