BACHELOR (B.SC.)
DATA SCIENCE

Data Science encompasses the generation of insights and value from raw data and is the core of digital businesses across all sectors. It's a field that requires a diverse mix of capabilities and skills—and never gets boring. Data informs key decisions, leads to optimisation of existing processes, and is the enabler of entirely new business models via data insights and automation.

The IU bachelor in Data Science is an ideal opportunity to dive deep into the technical skills step-by-step—with a hands-on approach and expert guidance. Our professors make sure you gain the hacking skills, math and statistical knowledge, and domain expertise needed with the right balance of supervised and independent study. We put much emphasis on practical work throughout your degree, helping you to acquire a portfolio of projects to demonstrate your skills once you graduate. When you take a bachelor's degree in data science you join the data revolution that is leading major changes in businesses, economies, and societies today.

Degree
Bachelor of Science (B.Sc.)

Study start
Online: Anytime
On Campus: October 2022*

Study model available
Online, or On Campus

Duration
Online: 36, 48, or 72 months
On Campus: 36 months

Credits
180 ECTS

Ultimate flexibility
Our On Campus model means that…
– You can start your degree online for distance learning while taking care of visa issues and join us later in Germany to experience campus life. You say which semester you want to spend on campus or online.
– You want to go on a trip during your studies? No problem. You can study online at your own pace without missing any classes.

Fees
Online: From €75 per month
On Campus: From €349 per month

*Subject to approval by the Thuringian Ministry of Economy, Science and Digital Society. We expect the Ministry's approval no later than the start of the studies. So far, the approval has always been on time.

Study Content (180 ECTS)

PRESENCE TIMEFRAME	MODULE TITLE	SEMESTER	CREDITS (ECTS)	TEST TYPE
		1		
Oct/Nov/Dec	Mathematics: Analysis		5 ECTS	E
Oct/Nov/Dec	Database Modeling and Database Systems		5 ECTS	E
Oct/Nov/Dec	Agile Project Management		5 ECTS	WAPR
Jan/Feb/Mar	Introduction to Data Science		5 ECTS	OA
Jan/Feb/Mar	Introduction to Programming with Python		5 ECTS	E
Jan/Feb/Mar	Statistics – Probability and Descriptive Statistics		5 ECTS	E
		2		
Apr/May	Object Oriented and Functional Programming with Python		5 ECTS	P
Apr/May	Mathematics: Linear Algebra		5 ECTS	E
Apr/May	Intercultural and Ethical Decision-Making		5 ECTS	WACS
Jul/Aug	Introduction to Academic Work		5 ECTS	BWB
Jul/Aug	Collaborative Work		5 ECTS	OA
Jul/Aug	Statistics – Inferential Statistics		5 ECTS	E
		3		
Oct/Nov/Dec	Project: Build a Data Mart in SQL		5 ECTS	P
Oct/Nov/Dec	Data Quality and Data Wrangling		5 ECTS	WAWA
Oct/Nov/Dec	Cloud Computing		5 ECTS	E
Jan/Feb/Mar	Machine Learning – Supervised Learning		5 ECTS	E
Jan/Feb/Mar	Machine Learning – Unsupervised Learning and Feature Engineering		5 ECTS	WACS
Jan/Feb/Mar	Explorative Data Analysis and Visualization		5 ECTS	WAWA
		4		
Apr/May	Business Intelligence		5 ECTS	E
Apr/May	Project: Business Intelligence		5 ECTS	WAPR
Apr/May	Data Science Software Engineering		5 ECTS	E
Jul/Aug	Big Data Technologies		5 ECTS	WARE
Jul/Aug	Time Series Analysis		5 ECTS	E
Jul/Aug	Introduction to Data Protection and Cyber Security		5 ECTS	E
		5		
Oct/Nov/Dec	Model Engineering		5 ECTS	WACS
Oct/Nov/Dec	Neural Nets and Deep Learning		5 ECTS	OA
Online	Elective A		10 ECTS	
Jan/Feb/Mar	Seminar: Ethical Considerations in Data Science		5 ECTS	WARE
Online	Elective B		10 ECTS	
Apr/May	Project: From Model to Production		5 ECTS	OPR
		6		
Online	Electives C		10 ECTS	
Online	Bachelor Thesis		10 ECTS	WABT & PC

E = Exam, OA = Oral assignment, PC = Presentation: Colloquium, WB = Workbook, BWB = Basic Workbook, AWB = Advanced Workbook, WABT = Written assessment: Bachelor thesis, WACS = Written assessment: Case study, WAMT = Written assessment: Master thesis, WAPR = Written assessment: Project report, WARE = Written assessment: Research essay, WAWA = Written assessment: Written assignment, OPR = Oral project report, P = Portfolio, POP = Proof of Participation

CHOOSE YOUR ELECTIVES

Choose one elective from the Electives A programmes:
– AI Specialist
– Data Analyst
– Data Engineer

Choose one elective from the Electives B programmes:
– Applied Sales
– Automation and Robotics
– Autonomous Driving
– International Marketing and Branding
– Managerial Economics and Corporate Finance and Investment
– Smart Factory
– Supply Chain Management

Choose one elective from the Electives C programmes:
– AI Specialist
– Applied Sales
– Automation and Robotics
– Autonomous Driving
– Data Analyst
– Data Engineer
– Foreign Language: French
– Foreign Language: Italian
– Foreign Language: Spanish
– International Marketing and Branding
– Managerial Economics and Corporate Finance and Investment
– Smart Factory
– Studium Generale
– Supply Chain Management

Choose one specialisation from each block.