CURRICULUM M.Sc. DATA SCIENCE

myStudies, 120 ECTS

Month	Model 1: Programme Start October			Model 2: Programme Start April		
	Courses			Courses		
Oct	Data Science	Use Case and Evaluation	Programming with Python			
Nov						
Dec						
Jan	Advanced Mathematics	Project: Data Science Use Case	Software Engineering for Data Intensive Sciences			
Feb						
Mar						
Apr	Advanced Statistics	Big Data Technologies	Cyber Security and Data Protection	Data Science	Use Case and Evaluation	Programming with Python
May						
Jun	Semester Break					
Jul	Seminar: Data Science and Society	Machine Learning[1]	Deep Learning[1]	Advanced Mathematics	Project: Data Science Use Case	Software Engineering for Data Intensive Sciences
Aug						
Sep	Semester Break					
Oct	Case Study: Model Engineering		Seminar: Current Topics in Data Science	Advanced Statistics	Big Data Technologies	Cyber Security and Data Protection
Nov						
Dec						
Jan	Elective A Course a		Elective A Course b	Seminar: Data Science and Society	Machine Learning[1]	Deep Learning[1]
Feb						
Mar						
Apr	Elective B Course c		Elective B Course d	Case Study: Model Engineering		Seminar: Current Topics in Data Science
May						
Jun	Semester Break					
Jul	Master Thesis			Elective A Course a		Elective A Course b
Aug						
Sep	Semester Break					
Oct				Elective B Course c		Elective B Course d
Nov						
Dec						
Jan				Master Thesis		
Feb						
Mar						

INTERNATIONAL UNIVERSITY OF APPLIED SCIENCES

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Here you see the order in which you can study your courses in presence depending on your personal study start in October or April.
IU International University of Applied Sciences offers you the flexibility to switch from campus to online studies or the other way around. You decide which semester you want to spend on campus or online.
The above is only valid for DACH students. For INT Students: attending the courses on Campus in presence is mandatory and will be verified due to VISA regulations.

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Each semester consists of two blocks that conclude with a two-week exam preparation phase. You can also defer those exams to a later date that you do not want to take during this period. This way, your exam phases are always spread evenly over the year.
In each block, you attend classes on campus for usually three courses to deepen the content in direct exchange with your fellow students and lecturers. You have semester breaks in June and September.

[1] These courses take place one after another within the same quarter.

Elective A*

Data Science Specialist
- a) Manufacturing Methods Industry 4.0
- b) Project: Data Science for Industry 4.0

Technical Project Lead
- a) IT Project Management
- b) Project: Technical Project Planning

Data Engineer
- a) Data Engineering
- b) Project: Data Engineering

Business Analyst
- a) Business Intelligence I
- b) Project: Business Intelligence

Elective B*

Management
- c) Leadership
- d) Strategic Management

Sales, Pricing and Brand Management
- c) Global Brand Management
- d) Sales and Pricing

Consumer Behaviour and Research
- c) International Consumer Behavior
- d) Applied Marketing Research

Corporate Finance
- c) Corporate Finance
- d) Advanced Corporate Finance

Innovate and Change
- c) Change Management
- d) Innovation and Entrepreneurship

Cognitive Computing
- c) NLP and Computer Vision
- d) Advanced NLP and Computer Vision

Applied Autonomous Driving
- c) Architectures of Self-Driving Vehicles
- d) Case Study: Localization, Motion Planning & Sensor Fusion

Self Learning Systems
- c) Reinforcement Learning
- d) Inference and Causality

Industrial Automation and Internet of Things
- c) Industrial Automation
- d) Internet of Things

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* Electives: Choose one module with two courses from the Elective A and one module from the Elective B.
Note: Those elective modules where the minimum number of participants is not reached will only be offered online (distance learning). However, IU ensures that there are always electives on campus.

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Attention: Attendance times may vary slightly depending on public holidays and the federal state holidays the campus is located in.

Course Information

Module	Course Code	Course	ECTS	Type of Exam
Data Science	DLMBDSA01	Data Science	5	Exam
Use Case and Evaluation	DLMDSUCE01	Use Case and Evaluation	5	Oral Assignment
Programming with Python	DLMDSPWP01	Programming with Python	5	Written Assignment
Advanced Mathematics	DLMDSAM01	Advanced Mathematics	5	Exam
Project: Data Science Use Case	DLMDSPDSUC01	Project: Data Science Use Case	5	Portfolio
Software Engineering for Data Intensive Sciences	DLMDSSEDIS01	Software Engineering for Data Intensive Sciences	5	Oral Assignment
Advanced Statistics	DLMDSAS01	Advanced Statistics	5	Advanced Workbook
Big Data Technologies	DLMDSBDT01	Big Data Technologies	5	Oral Assignment
Cyber Security and Data Protection	DLMCSITSDP01	Cyber Security and Data Protection	5	Oral Assignment
Seminar: Data Science and Society	DLMDSSDSS01	Seminar: Data Science and Society	5	Research Essay
Machine Learning	DLMDSML01	Machine Learning	5	Exam
Deep Learning	DLMDSDL01	Deep Learning	5	Oral Assignment
Case Study: Model Engineering	DLMDSME01	Case Study: Model Engineering	5	Case Study
Seminar: Current Topics in Data Science	DLMDSSCTDS01	Seminar: Current Topics in Data Science	5	Research Essay
ELECTIVE A*		e.g. Business Analyst	10	
ELECTIVE B*		e.g. Applied Autonomous Driving	10	
Master Thesis		Master Thesis	27	Master Thesis
		Thesis Defense	3	Presentation: Colloquium