CURRICULUM B.Sc. DATA SCIENCE

myStudies, 180 ECTS

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	Model 1: Programme Start October			Model 2: Programme Start January				Model 3: Programme Start April			Model 4: Programme Start July				
Month	Courses			Courses			Courses			Courses					
Oct	Introduction to	Introduction to Academic	Agile Project												INTERNATIONAL UNIVERSITY OF
Nov	Data Science	Work	Management												APPLIED SCIENCES
Dec Jan			Statistics -				Statistics -								
Feb	Introduction to Programming with	Mathematics: Analysis	Probability and Descriptive	Introduction to	ntroduction to Programming	Mathematics: Analysis	Probability and Descriptive								\checkmark
Mar	Python		Statistics	Data Science	with Python	Analysis	Statistics				_				
Apr	Functional	Mathematics: Linear	Statistics -	Introduction to Ad	ademic Work	Agile Projec	ct Management	Introduction t		n to Academic	Agile Project				
Мау	Programming with Python	Algebra	Inferential Statistics					Data Science	W	ork	Management				Here you see the order in which you stud your courses in presence depending on
Jun Jul			Introduction to	Intercultural and			Semest Introduction to	er Break	o l		Statistics - Probability	1	ntroduction to	Statistics -	your personal study start in October,
Aug	Intercultural and Ethical Decision-Making	Collaborative Work	Data Protection &	Ethical Decision-	Collabor	ative Work		Programming w	ith Mathemat	ics: Analysis	and Descriptive Statistics	Introduction to	Programming An	ematics: Probability and alysis Descriptive	January, April or July. Each semester consists of two blocks. In each block, you
Sep		1	Cyber Security	Making			Cyber Security Semest	Python er Break			Statistics	I	with Python	Statistics	attend classes on campus for usually three courses to deepen the content in
Oct	Database Modeling			Object Oriented and			6	Object Oriented							direct exchange with your fellow student
Nov	and Database	Project: Build a Data Mart in SQL	Cloud Computing	Functional Programming with		itics: Linear gebra	Statistics - nferential Statistics	Functional Programming w		tics: Linear ebra	Statistics - Inferential Statistics	Introduction to A	cademic Work Agi	ile Project Management	and lecturers. You have semester breaks in June and September. Attending the
Dec	Systems	-		Python				Python							courses on campus is mandatory and wi
Jan	Machine Learning -	Machine Learning -	Data Science	Machine Learning -		Learning -	Data Science	Intercultural ar	-	- 11 10/	Introduction to	Intercultural and	Collister and a plan	Introduction to	be verified due to Visa regulations (not valid for DACH students).
Feb Mar	Supervised Learning	Unsupervised Learning and Feature Engineering	d Software Engineering	Supervised Learnin	5 .	d Learning and Engineering	Software Engineering	Ethical Decisio Making	1- Collabora	ative Work	Data Protection & Cyber Security	Ethical Decision- Making	Collaborative Wo	rk Data Protection & Cyber Security	Each block concludes with a two-week
Apr	Business	Project: Business	Data Quality and	Business	Proiect:	Business	Data Quality and	Business	Proiect:	Business	Data Quality and	Object Oriented & Functional	Mathematics: Line	ear Statistics -	exam preparation phase. You can defer
Мау	Intelligence ¹	Intelligence ¹	Data Wrangling	Intelligence ¹	2	igence ¹	Data Wrangling	Intelligence ¹		igence ¹	Data Wrangling	Programming with	Algebra	Inferential Statistics	those exams to a later date that you do not want to take during this period. This
Jun		-		-			Semest	er Break			-				way, your exam phases are always sprea evenly over the year. Exceptions to this
Jul Aug	Explorative Data — Analysis and Visualization	Time Series Analysis	Model Engineering	Explorative Data Analysis and Visualization	Time Seri	ies Analysis	Model Engineering	Explorative Dat Analysis and Visualization	Time Seri	es Analysis	Model Engineering	Explorative Data Analysis and Visualization	Time Series Analy	sis Model Engineering	are courses that count as admission requirements for other courses.
Sep	Violatization	1		Vioudization			Semest	er Break				viou di La cioni			
Oct Nov Dec	Ũ	eural Nets and Elective eep Learning (online)		Database Modeling and Database Systems	Project: Buil	ld a Data Mart SQL	Cloud Computing	Database Model and Database Systems	Project: Buil	d a Data Mart SQL	Cloud Computing	Database Modeling and Database Systems	Project: Build a Data in SQL	Mart Cloud Computing	
Jan Feb Mar	Seminar: Ethical Considerations in Data Science	Elective (online)	Elective (online)	Seminar: Ethical Considerations in Data Science		octive nline)	Elective (online)	Machine Learnir Supervised Learr	unsupervised	Learning - d Learning and ngineering	Data Science Software Engineering	Machine Learning Supervised Learnin	IIInsiinen/ised i earnir	ng and Software	Attention: Attendance times may vary slightly depending on public holidays an
Apr May	Project: From Mode to Production	Elective (online)	Elective (online)	Project: From Mode to Production		octive nline)	Elective (online)	Project: From Mc to Productior		ctive Iline)	Elective (online)	Business Intelligence ¹	Project: Busines Intelligence ¹	s Data Quality and Data Wrangling	the federal state holidays the campus is located in.
Jun				•	·		Semest	er Break				•		•	
Jul		Bachelor Thesis			Bachelor Thesis				Bachelor Thesis			Bachelor Thesis		\checkmark	
Aug															
Sep							Semest	er Break							If you are studying Model 2, 3 or 4 you wi
Oct Nov				u u u u u u u u u u u u u u u u u u u	eural Nets and		Elective	Big Data	Neural Nets and	Elective		Ũ		ective Elective	have to start your Bachelor Thesis before completing your final courses.
Dec				Technologies I	eep Learning	(online)	(online)	Technologies	Deep Learning	(online)	(online)	Technologies	Deep Learning (or	nline) (online)	
Jan								Seminar: Ethic	al			Seminar: Ethical			
Feb								Considerations	in Lie	ctive Iline)	Elective (online)	Considerations in	Elective	Elective (online)	\checkmark
Mar								Data Science	,			Data Science	, ,		¹ These courses take place one after
Apr May												Project: From Mode to Production	el Elective (online)	Elective (online)	another within the same quarter.

Elective A*	Elective B*	Elective C*				
Data Engineer Data Engineering Project: Data Engineering	International Marketing and Branding International Marketing International Brand Management	<i>Data Engineer</i> Data Engineering Project: Data Engineering	Smart Factory Smart Factory I Smart Factory II	* Electives: Choose one module with two courses from the Elective A, one module from the Elective B and one module from the Elective C. Every elective module can only be chosen once.		
<i>Data Analyst</i> Advanced Data Analysis Project: Data Analysis	Applied Sales Applied Sales I Applied Sales II	<i>Data Analyst</i> Advanced Data Analysis Project: Data Analysis	Production Engineering, Automation and Robotics Production Engineering Automation and Robotics			
<i>AI Specialist</i> Artificial Intelligence Project: Artificial Intelligence	Supply Chain Management Supply Chain Management I Supply Chain Management II	Al Specialist Artificial Intelligence Project: Artificial Intelligence	Autonomous Driving Self-Driving Vehicles Seminar: Current Topics and Trends in Self-Driving Technology	Note: The Electives are only offered in distance learning (online). By choosing the elective "Internship" you cannot qualify for the dual degree with LSBU.		
	<i>Managerial Economics and Corporate Finance and Investment</i> Managerial Economics Corporate Finance and Investment	International Marketing and Branding International Marketing International Brand Management	Foreign Language German, Italian, French or Spanish Studium Generale Internship			
	Smart Factory Smart Factory I Smart Factory II	Applied Sales Applied Sales I Applied Sales II				
	Production Engineering, Automation and Robotics Production Engineering Automation and Robotics	Supply Chain Management Supply Chain Management I Supply Chain Management II				
	Autonomous Driving Self-Driving Vehicles Seminar: Current Topics and Trends in Self-Driving Technology	Managerial Economics and Corporate Finance and Investment Managerial Economics Corporate Finance and Investment				

Course Information					
Module	Course Code	Course	ECTS	Type of Exam	
Introduction to Data Science	DLBDSIDS01	Introduction to Data Science	5	Oral Assignment	
Intercultural and Ethical Decision-Making	DLBCSIDM01	Intercultural and Ethical Decision-Making	5	Case Study	
Agile Project Management	DLBCSAPM01	Agile Project Management	5	Project Report	
Introduction to Programming with Python	DLBDSIPWP01	Introduction to Programming with Python	5	Exam	
Mathematics: Analysis	DLBDSMFC01	Mathematics: Analysis	5	Exam	
Statistics - Probability and Descriptive Statistics	DLBDSSPDS01	Statistics - Probability and Descriptive Statistics	5	Exam	
Object Oriented and Functional Programming with Python	DLBDSOOFPP01	Object Oriented and Functional Programming with Python	5	Portfolio	
Mathematics: Linear Algebra	DLBDSMFLA01	Mathematics: Linear Algebra	5	Exam	
Statistics - Inferential Statistics	DLBDSSIS01	Statistics - Inferential Statistics	5	Exam	
Introduction to Academic Work	DLBCSIAW01	Introduction to Academic Work	5	Basic Workbook (pass / not pass)	
Collaborative Work	DLBCSCW01	Collaborative Work	5	Oral Assignment	
Introduction to Data Protection and Cyber Security	DLBCSIDPITS01	PITS01 Introduction to Data Protection and Cyber Security		Exam	
Database Modeling and Database Systems	DLBCSDMDS01	Database Modeling and Database Systems	5	Exam	
Project: Build a Data Mart in SQL	DLBDSPBDM01	Project: Build a Data Mart in SQL	5	Portfolio	
Cloud Computing	DLBDSCC01	SCC01 Cloud Computing		Exam	
Machine Learning - Supervised Learning	DLBDSMLSL01	Machine Learning - Supervised Learning	5	Exam	
Machine Learning - Unsupervised Learning and Feature Engineering	DLBDSMLUSL01	Machine Learning - Unsupervised Learning and Feature Engineering	5	Case Study	
Data Science Software Engineering	DLBDSDSSE01	Data Science Software Engineering	5	Exam	
Business Intelligence	DLBCSEBI01	Business Intelligence	5	Exam	
Project: Business Intelligence	DLBCSEBI02	Project: Business Intelligence	5	Project Report	
Data Quality and Data Wrangling	DLBDSDQDW01	Data Quality and Data Wrangling	5	Written Assignment	
Explorative Data Analysis and Visualization	DLBDSEDAV01	Explorative Data Analysis and Visualization	5	Written Assignment	
Time Series Analysis	DLBDSTSA01	Time Series Analysis	5	Exam	
Model Engineering	DLBDSME01	Model Engineering	5	Case Study	
Big Data Technologies	DLBDSBDT01	Big Data Technologies	5	Exam	
Neural Nets and Deep Learning	DLBDSNNDL01	Neural Nets and Deep Learning	5	Oral Assignment	
Seminar: Ethical Considerations in Data Science	DLBDSSECDS01	Seminar: Ethical Considerations in Data Science	5	Research Essay	
Project: From Model to Production	DLBDSMTP01	Project: From Model to Production	5	Oral Project Report	
ELECTIVE A*		e.g. Data Analyst	10		
ELECTIVE B*		e.g. International Marketing and Branding	10		
ELECTIVE C*		e.g. Smart Factory	10		
Bachelor Thesis		Bachelor Thesis	9	Bachelor Thesis	
		Thesis Defense	1	Presentation: Colloquium	