CURRICULUM M.Sc. ARTIFICIAL INTELLIGENCE

Campus Studies, 120 ECTS Credits

	Model 1: Programme Start October			Model 2: Programme Start April		
Month	**Courses**			**Courses**		
Oct	Artificial Intelligence	Advanced Mathematics	Programming with Python			
Nov						
Dec						
Jan	Seminar: AI and Society	Advanced Statistics*	Machine Learning*			
Feb						
Mar						
Apr	Use Case and Evaluation[1]	Project: AI Use Case	Inference and Causality*	Artificial Intelligence	Advanced Mathematics	Programming with Python
May						
Jun	Lecture-Free Period					
Jul	Deep Learning*		NLP and Computer Vision*	Seminar: AI and Society	Advanced Statistics*	Machine Learning*
Aug						
Sep	Lecture-Free Period					
Oct	Reinforcement Learning*	Elective A Course a	Elective A Course b	Use Case and Evaluation[1]	Project: AI Use Case	Inference and Causality*
Nov						
Dec						
Jan	Software Engineering for Data Intensive Sciences*		Elective B Course c	Deep Learning*		NLP and Computer Vision*
Feb						
Mar						
Apr	Seminar: Current Topics in AI		Elective B Course d	Reinforcement Learning*	Elective A Course a	Elective A Course b
May						
Jun	Lecture-Free Period					
Jul	Master Thesis			Software Engineering for Data Intensive Sciences*		Elective B Course c
Aug						
Sep	Lecture-Free Period					
Oct				Seminar: Current Topics in AI		Elective B Course d
Nov						
Dec						
Jan				Master Thesis		
Feb						
Mar						

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Here you see the order in which you study your courses in presence depending on your personal study start in October or April. Each semester consists of two blocks. 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 lecture-free periods in both June and September, which you can spend reviewing and preparing for exams. Attending the courses on campus is mandatory and will be verified due to Visa regulations (not valid for DACH students).

Each block concludes with a two-week exam preparation phase. You can 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. Exceptions to this are courses that count as admission requirements for other courses.

Note: You can already start with your thesis earlier than the designated block, once you have met the minumum amount of credit points required to enter.

Elective A~

UI/UX Expert
- a) User Interface and Experience
- b) Project: Human Computer Interaction*

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

AI Specialist
- a) Advanced NLP and Computer Vision*
- b) Project: NLP and Computer Vision*

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

*Artificial Intelligence in FinTech**
- a) Concepts of FinTechs and Artificial Intelligence
- b) Fraud Detection FinTechs*

Applied Autonomous Driving
- a) Architectures of Self-Driving Vehicles
- b) Case Study: Localization, Motion Planning and Sensor Fusion

*Artificial Intelligence in Supply Chain Management**
- a) Concepts of Artificial Intelligence in Supply Chain Management*
- b) Multi-Agent Systems*

*AI in Healthcare and Medical Imaging**
- a) AI in Healthcare*
- b) AI in Medical Imaging and Diagnostics*

*AI in E-Commerce, Marketing and Demand Forecast**
- a) Introduction to AI in E-Commerce and Marketing*
- b) Demand Forecast and Inventory Control*

*Industrial AI**
- a) AI in Production*
- b) Project: Industrial Internet of Things*

*Natural Language Processing and Voice Assistants**
- a) Natural Language Processing*
- b) Project: Voice Assistants*

*Foundational Computer Vision**
- a) Image Processing and Low Level Vision*
- b) Mid-Level Vision and Video*

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~ Electives: Choose one module from the Elective A and one module from the Elective B.

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

Advanced Robotics 4.0
- c) Industrial and Mobile Robotics
- d) Project: Collaborative Robotics

*Robo Advisory and AI in FinTech**
- c) Robo Advisory*
- d) Project: AI in FinTech*

*Functional Security and Computer Vision for Autonomous Systems**
- c) Functional Security
- d) Computer Vision for Autonomous Systems

*AI and its Application in Demand Forecast and Procurement**
- c) Demand Forecast and Inventory Control*
- d) Artificial Intelligence in Procurement*

*Medical NLP and Medical Robotics**
- c) Medical NLP*
- d) Medical Robotics and Devices*

*AI for Analytics, Personalization and Recommender Systems**
- c) AI in Marketing and Analytics*
- d) Personalization and Recommender Systems*

*Industrial Automation & Computer Vision for Autonomous Systems**
- c) Industrial Automation
- d) Computer Vision for Autonomous Systems

*NLP and Innovative Technologies in Education**
- c) NLP in Education*
- d) NLP for Accessibility*

*Cognitive Computer Vision**
- c) High-Level Vision*
- d) Project: Computer Vision*

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

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* This course comes with admissions requirements. Please consult the module handbook for more information.

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