

CURRICULUM B.Sc. COMPUTER SCIENCE

Campus Studies, 180 ECTS Credits

	Model 1: Programme Start October					Model 2: Programme Start April				
Month	Courses					Courses				
Oct	Semester 1	Introduction to Computer Science	Software Engineering Principles	Introduction to Programming with Python						
Nov										
Dec										
Jan										
Feb										
Mar	Semester 2	Mathematics: Analysis	Introduction to Academic Work for IT and Technology	Project: Programming with Python						
Apr										
May										
Jun										
Jul										
Aug	Semester 3	Collaborative Work	Statistics: Probability and Descriptive Statistics	Web Application Development	Semester 1	Collaborative Work	Statistics: Probability and Descriptive Statistics	Web Application Development		
Sep										
Oct										
Nov										
Dec										
Jan	Semester 4	Mathematics: Linear Algebra	Algorithms, Data Structures, and Programming Languages	Project: Object Oriented and Functional Programming in Python	Semester 2	Mathematics: Linear Algebra	Algorithms, Data Structures, and Programming Languages	Introduction to Programming with Python		
Feb										
Mar										
Apr										
May										
Jun	Semester 5	Computer Architecture and Operating Systems*	Intercultural and Ethical Decision-Making	Database Modeling and Database Systems	Semester 3	Introduction to Computer Science	Software Engineering Principles	Project: Object Oriented and Functional Programming in Python		
Jul										
Aug										
Sep										
Oct										
Nov	Semester 6	Project: Build a Data Mart in SQL	Elective A course a	Elective A course b	Semester 4	Mathematics: Analysis	Introduction to Academic Work for IT and Technology	Project: Programming with Python		
Dec										
Jan										
Feb										
Mar										
Apr	Semester 7	Theoretical Computer Science and Mathematical Logic	Cryptography	IT Service Management	Semester 5	Theoretical Computer Science and Mathematical Logic	Cryptography	IT Service Management		
May										
Jun										
Jul										
Aug										
Sep	Semester 8	Project: Software Engineering	Elective B course c	Elective B course d	Semester 6	Project: Software Engineering	Elective A course a	Elective A course b		
Oct										
Nov										
Dec										
Jan										
Feb	Semester 9	Internship: Computer Science & Business Information Systems (30 CP)			Semester 7	Computer Architecture and Operating Systems*	Intercultural and Ethical Decision-Making	Database Modeling and Database Systems		
Mar										
Apr										
May										
Jun										
Jul	Semester 10	Project: IT Service Management	Seminar: Current Topics in Computer Science	Elective C course e	Elective C course f	Internship: Computer Science & Business Information Systems (30 CP)				
Aug										
Sep										
Oct										
Nov										
Dec	Semester 11	Bachelor Thesis			Semester 8	Project: IT Service Management	Seminar: Current Topics in Computer Science	Elective C course e	Elective C course f	
Jan										
Feb										
Mar										
Apr										
May	Semester 12	Bachelor Thesis			Semester 9	Bachelor Thesis				
Jun										
Jul										
Aug										
Sep										
Oct	Semester 13	Bachelor Thesis			Semester 10	Project: IT Service Management	Seminar: Current Topics in Computer Science	Elective C course e	Elective C course f	
Nov										
Dec										
Jan										
Feb										
Mar	Semester 14	Bachelor Thesis			Semester 11	Bachelor Thesis				
Apr										
May										
Jun										
Jul										
Aug	Semester 15	Bachelor Thesis			Semester 12	Bachelor Thesis				
Sep										
Oct										
Nov										
Dec										
Jan	Semester 16	Bachelor Thesis			Semester 13	Bachelor Thesis				
Feb										
Mar										
Apr										
May										

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APPLIED SCIENCES

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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. You attend campus lectures during each semester and learn in direct exchange with your fellow students and lecturers. In addition, you will have lecture-free periods, 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 EU citizens).

Please note: It is strongly advised to start researching and applying for internships early on during your studies to increase your chances of obtaining one in time for the designated Internship block.

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

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

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~ **Specializations:** During a specialization, you have the opportunity to deepen your knowledge in a subject area of your choice. Specializations consist of 3 blocks of Elective modules, specifically tailored to your topic of choice.

Specializations (Elective Tracks) ~			
Elective A		Elective B	Elective C
Specialized Tracks:			
Applied Artificial Intelligence	Applied Artificial Intelligence	Applied Artificial Intelligence	Applied Artificial Intelligence
	a) Artificial Intelligence b) Statistics - Inferential Statistics	c) Machine Learning - Supervised Learning d) Machine Learning - Unsupervised Learning and Feature Engineering	e) Neural Nets and Deep Learning f) Project: Edge AI
Data Science	Data Science	Data Science	Data Science
	a) Introduction to Data Science b) Statistics - Inferential Statistics	c) Data Quality and Data Wrangling d) Data Analytics and Big Data	e) Big Data Technologies f) Exploratory Data Analysis and Visualization
Non-Specialized Track:			
Additional (non-specialization) Electives Modules			
	a) Requirements Engineering b) Mobile Software Engineering	c) Introduction to Data Protection and Cyber Security d) IT Project Management	e) Computer Science and Society f) Human Computer Interaction