CURRICULUM M.Sc. CYBER SECURITY

a) Blockchain

b) Quantum Computing

Secure Software Development

a) Secure Software Development

b) Project: Secure Software Implementation

	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	Corporate													
Nov	Governance of IT,	Advanced Mathematics	Cyber Security and Data Protection											
Dec	Compliance, and Law													
Jan	Advanced Decemb	Cyber Risk Assessment and	IT Systems: Software	Advanced Decemb	Cyber Risk Assessment and		IT Systems: Software							
Feb	Advanced Research Methods			Advanced Research Methods										
Mar		Management			Manageme	ent								
Apr	IT Systems: Hardware	Cyber Systems and Computer Science for		Corporate Governance Advan				Corporate Governance of IT, Compliance, and	ı Advanced		Cyber Security and			
May	Tr Gysternsi Hararare	Network Forensics	IT Security	Law	Mathemat	tics	Data Protection	Law	Mathematics		Data Protection			
Jun							Semesto	er Break						
Jul	Seminar: Advanced	Seminar: Standards	Project: Current Challenges of Cyber	Seminar: Advanced		minar: Standards Challenges		Advanced Research	Cyber Risk Assessment and		IT Systems: Software	Advanced Research	Cyber Risk Assessment and	d IT Systems: Software
Aug	Cyber Security and Frameworks Security		Cyber Security and Frameworks		Security	Methods	Management		Tr Gystems, Goreware	Methods	Management			
Sep		Semester Break												
Oct					Cyber System	nc and	Theoretical		Cyber Systems and		Theoretical	Corporate	Advanced	Cyber Security and
Nov	Cryptology	Secure Networking		IT Systems: Hardware	Network Fore	ork Forensics Computer Science for		IT Systems: Hardware	Network Forensics		Computer Science for	(Governance of IT	Mathematics	'
Dec							IT Security				IT Security	Compliance, and Law		
Jan	Elective A		Elective A	Elective A		Elective A Course b		Seminar: Advanced			Project: Current	Seminar: Advanced	Seminar: Standards Challenge	Project: Current
Feb	Course a		Course b					Cyber Security			Challenges of Cyber	Cyber Security		Challenges of Cyber
Mar										_	Security			Security
Apr May	Elective B Course c		Elective B Course d	Cryptology	/	Secure Networking		Cryptology		Sec	ure Networking	IT Systems: Hardware	Cyber Systems a Network Forensi	
Jun							Semeste	er Break		1				
Jul						Elective A		Elective A	Elective A		Elective A			
Aug	- Master Thesis		Master Thesis				Course a		Course b	Course a		Course b		
Sep	Semester Break													
Oct														
Nov			Elective B Course c		Elective B Course d	Elective B Course c			Cryptology		Secure Networking			
Dec				Course C			Course u	Course c			Course a			
Jan										•				
Feb							Master Thesis				Master Thesis			
Mar														
Apr												Elective B		Elective B
May												Course c		Course d
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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, January, April or July. 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 semester breaks in June and September. 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.



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

Elective A*

Cyber Criminality

a) Attack Scenarios and Incident Response
b) Project: Cyber Forensics

Cyber Forensics

Cyanizational Transformation
c) Tools in Organizational Analysis
d) Management of IT Services and Architecture

Blockchain and Quantum Computing

IT Law for IT Security
c) International IT Law
d) Seminar: Legal Framework for IT Security
Audit- and Security Testing
c) Attack Models and Auditing
d) Seminar: IT Security Tests
Business Analyst

c) Business Intelligence I

Thesis Defense

Continuous and Lifecycle Security
c) Cyber Resilience
d) Seminar: Applying Threat Intelligence
Data Science and Big Data Technologies
c) Data Science
d) Big Data Technologies
Industrial Automation and Internet of Things

Presentation: Colloquium

c) Industrial Automationd) Internet of ThingsArtificial Intelligencec) Artificial Intelligence

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* Electives: Choose one module with two courses from the Elective A and one module from the Elective B. Every elective module can only be chosen once.

<u>Note:</u> 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.



If you are studying Model 2 or 4 you will have to start your Master Thesis before completing your Elective B courses.

d) Project: Business Intelligence d) Seminar: AI and Society Internship **Course Information Course Code ECTS** Course Type of Exam Corporate Governance of IT, Compliance, and Law DLMIGCR01-01_E Corporate Governance of IT, Compliance, and Law Exam Advanced Mathematics DLMDSAM01 Advanced Mathematics Exam DLMCSITSDP01 Cyber Security and Data Protection Oral Assignment Cyber Security and Data Protection **Advanced Research Methods** DLMARM01 Advanced Research Methods Written Assignment DLMCSECRAM01_E Cyber Risk Assessment and Management Cyber Risk Assessment and Management Exam IT Systems: Software DLMIMITSS01_E IT Systems: Software Exam IT Systems: Hardware DLMIMITSH01_E IT Systems: Hardware Exam Cyber Systems and Network Forensics DLMCSECSNF01_E Cyber Systems and Network Forensics Exam Theoretical Computer Science for IT Security DLMCSETCSITS01_E Theoretical Computer Science for IT Security Exam DLMCSEAITSC01 Seminar: Advanced Cyber Security Seminar: Advanced Cyber Security Research Essay DLMIMSSF01_E Seminar: Standards and Frameworks Seminar: Standards and Frameworks Research Essay DLMCSEPCCCS01_E Project Report Project: Current Challenges of Cyber Security Project: Current Challenges of Cyber Security DLMCSEAITSC02 Oral Assignment Cryptology Cryptology DLMCSEESN01_E Exam Secure Networking Secure Networking **ELECTIVE A*** e.g. Blockchain and Quantum Computing **ELECTIVE B*** e.g. Data Science and Big Data Technologies Master Thesis **Master Thesis Master Thesis**