## CURRICULUM B.Sc. CYBER SECURITY

ny studies,	180 ECTS Cre															
	Model 1	: Program	me Start	October	Model	2: Progran	nme Start	January	Mod	el 3: Progr	amme Sta	rt April	Mod	el 4: Progra	mme Sta	rt July
Month	Courses				Courses			Courses			Courses					
Oct	Operating Systems.															
Nov	Computer Networks,	Mathematic	s: Analysis	Requirements Engineering												
Dec	and Distributed Systems			Engineering												
					Operating			T								
Jan	Introduction to	Introduc	tion to	Statistics - Probability and	Systems, Computer	Introduction to	Introduction									
Feb	Academic Work	Programming	with Python	Descriptive Statistics	Networks, and Distributed	Academic Work	Programmir with Pytho									
Mar				Statistics	Systems			Statistics								
Apr	Intercultural and Ethical Decision- Making  Mathematics: Linear Algebra		System Pentesting Basics			atics: Linear System Pentesting gebra Basics		Operating Systems, Computer Networks, and Distributed	Intercultural and Ethical Decision- Making	Mathematic Linear Algeb						
May									Systems							
Jun								Lecture-	Free Period							
Jul	Introduction to Data Protection & Cyber Security	Collabora	tive Work	Introduction to the Internet of Things	Introduction to Da Protection & Cybe Security		ative Work	Introduction to the Internet of Things	Introduction to D Protection & Cyb Security		ative Work	Introduction to the Internet of Things	Operating Systems, Computer Networks, and Distributed Systems	Introduction to Data Protection & Cyber Security	Collaborativ Work	Introduction to the Internet of Things
													Distributed Systems			
Sep		ı						Lecture-	ree Period							
Oct	Introduction to	Introduction to Object-oriented Network Forensics* Programming with Java		Cloud Computing	Mathematic	Analysis Requirem		ents Engineering	Mathemati	cs: Analysis	Requirem	nts Engineering	Mathematics: Analysis		Requirem	ents Engineering
Dec	Network Forensics*															
Jan	Algorithms, Data				Algorithms, Data							Statistics -				Statistics -
Feb	Structures, and Programming	ITL	aw	Host and Software Forensics*	Structures, and Programming	IT	Law	Host and Software Forensics*	Introduction to Academic Wor		uction to ng with Python	Probability and Descriptive	Introduction to Academic Work		ction to g with Python	Probability and Descriptive
Mar	Languages				Languages						. , ,	Statistics		-	- 7	Statistics
Apr May	Theoretical Comp. Sciences & Mathematical Logic	es & IT Project Management		IT Service Management	Theoretical Comp. Sciences & IT Project Management Mathematical Logic		IT Service Management	Theoretical Com Sciences & Mathematical Lo	IT Project I	IT Project Management		Intercultural an Ethical Decision Making	Mathema	Mathematics: Linear S Algebra		
Jun	DevSecOps and				DevSecOps and			Lecture-	ree Period DevSecOps an				DevSecOps and			
Jul	Common Software	Cryptog	graphy	Information Security Standards	Common Softwa		graphy	Information Security Standards	Common Softwa		ography	Information Security Standards	Common Softwa		graphy	Information Security Standards
Aug	Weaknesses*			Weaknes Weaknes		aknesses		Weaknesses*		Security Standards	Weaknesses*		Security Standards			
Sep Oct	1					1		Lecture	ice i enou					1		
Nov Dec	Artificial A Intelligence	dvanced Data Analysis	Elective A Course a	Elective A Course b	Introduction to Network Forensic		oriented ng with Java	Cloud Computing	Introduction to Network Forensi		oriented ing with Java	Cloud Computing	Introduction to Network Forensio		oriented ng with Java	Cloud Computing
Jan Feb	Project: Data Analysis			Elective B Course d	Project: Data Elective B Analysis Course c		Elective B Course d	Algorithms, Da Structures, an Programming	d n	Law	Host and Software Forensics*	Algorithms, Dat Structures, and Programming	IT Law		Host and Software Forensics*	
Mar	Seminar: Current	E1	in C	Elective C	Seminar: Curren		tive C	Elective C	Languages Seminar: Curre		tive C	Elective C	Languages Theoretical Comp			IT Consiso
Mav	- Topics in Computer Science	Electi Cour		Course f	Topics in Comput Science	Elec	tive C irse e	Elective C Course f	Topics in Compu Science		itive C urse e	Course f	Sciences & Mathematical Log		fanagement	IT Service Management
Jun	Science	-			Lience	-		Lecture-	ree Period							
Jul	Bachelor Thesis			Bachelor Thesis			Bachelor Thesis			Bachelor Thesis						
Aug	bacnetor I hesis										bachetor thesis					
Sep								Lecture-	ree Period							
Oct					Artificial	Advanced Data	Elective A	Elective A	Artificial	Advanced Data	Elective A	Elective A	Artificial	Advanced Data	Elective A	Elective A
Nov					Intelligence	Analysis	Course a	Course b	Intelligence	Analysis	Course a	Course b	Intelligence	Analysis	Course a	Course b
Dec																
Jan Feb									Project: Data		tive B	Elective B	Project: Data		tive B	Elective B
Mar									Analysis	Cor	urse c	Course d	Analysis	Cou	irse c	Course d
Apr													Seminar: Curren		tive C	Elective C
													Topics in Comput Science	Cou	irse e	Course f



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visa regulations (not value for thick students). Each block concludes with a two-week exam perparation phase. You can defer those exams to a later date that you do not want to take during this period. This way, you exam phases are always spread evenly over the year. Esceptions 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.

If you are studying Model 2, 3 or 4 you will have to start your Bachelor Thesis before completing your final courses.

Elective A~	Elective B∼	Elective C~			
IT Security Consulting a) Technical and Operational IT Security Concepts b) Project: Configuration and Application of SIEM Systems*	Business Intelligence c) Business Intelligence I d) Business Intelligence II	IT Security Consulting e) Technical and Operational IT Security Concepts f) Project: Configuration and Application of SIEM Systems*	Future Threats  e) Threat Modeling" f) Project: Threat Modeling"	Smart Factory e) Smart Factory I f) Smart Factory II	
Social Engineering a) Social Engineering and Insider Threats b) Project: Social Engineering*	Future Threats  c) Threat Modeling*  d) Project: Threat Modeling*	Social Engineering e) Social Engineering and Insider Threats f) Project: Social Engineering*	Cloud Security  e) Security Controls in the Cloud* f) Project: Security by Design in the Cloud*	Production Engineering, Automation and Robotics e) Production Engineering f) Automation and Robotics*	
Host Forensics a) Static and Dynamic Malware Analysis* b) Seminar: Sandbox Interpretation*	Cloud Security  c) Security Controls in the Cloud*  d) Project: Security by Design in the Cloud*	Host Forensics e) Static and Dynamic Malware Analysis* f) Seminar: Sandbox Interpretation*	Pentesting  e) Principles of Ethical Hacking* f) Project: Pentesting*	Mobile Software Engineering  e) Mobile Software Engineering I  f) Mobile Software Engineering II	
DevSecOps a) Techniques and methods for agile software development b) Project: Agile DevSecOps Software Engineering*	Pentesting c) Principles of Ethical Hacking* d) Project: Pentesting*	DevSecOps  e) Techniques and methods for agile software developms f) Project: Agile DevSecOps Software Engineering	Industrial Systems Technology  e) Software Engineering Principles f) Internet of Things Security*	Microsoft ERP - Dynamics 365 Business Central - Functional Consultant e) Project: Dynamics 365 Business Central - Financial Company f) Project: Dynamics 365 Business Central - Business Processes with Focus on Sales and Distribution	
Security in Complex Networks a) IT Architecture Management b) Project: IT Security Architecture*	Industrial Systems Technology  c) Software Engineering Principles d) Internet of Things Security*	Security in Complex Networks  e) IT Architecture Management f) Project: IT Security Architecture*	Cyber Threat Intelligence e) Attack Models and Threat Feeds f) Project: Defense against APTs*	SAP - SAP S/4HAMA Business Process Integration - Application Associate e) Project: SAP S/4HAMA - Financial Company Setup incl. Human Capital Management f) Project: SAP S/4HAMA - Business Processes	
Network Forensics a) Protocols, Log- and Dataflow-Analysis in Depth* b) Seminar: Threat Hunting, Analysis and Incident Response*	Cyber Threat Intelligence c) Attack Models and Threat Feeds d) Project: Defense against APTs*	Network Forensics e) Protocols, Log- and Dataflow-Analysis in Depth* f) Seminar: Threat Hunting, Analysis and Incident Respon	Mobile Threats  e) Wireless and Telecom Security* f) Software Architectures of Mobile Devices	Career Development e) Personal Career Plan f) Personal Elevator Pitch	
	Mobile Threats  c) Wireless and Telecom Security*  d) Software Architectures of Mobile Devices	Business Intelligence e) Business Intelligence I f) Business Intelligence II	Supply Chain Management e) Supply Chain Management I f) Supply Chain Management III	Studium Generale Internship	

		a) software Activectures of Hoose Devices	i) business intelligence ii	i) Supply Chain Ma	
Course Information					
Module	Course Code	Course	ECTS Credits	Type of Exam	
Operating Systems, Computer Networks, and Distributed Systems*	DLBIBRVS01_E	Operating Systems, Computer Networks, and Distributed Systems*	5	Exam	
Mathematics: Analysis	DLBDSMFC01	Mathematics: Analysis	5	Exam	
Requirements Engineering	DLBCSRE01	Requirements Engineering	5	Exam	
Introduction to Academic Work	DLBCSIAW01	Introduction to Academic Work	5	Basic Workbook	
Introduction to Programming with Python	DLBDSIPWP01	Introduction to Programming with Python	5	Exam	
Statistics - Probability and Descriptive Statistics	DLBDSSPDS01-01	Statistics - Probability and Descriptive Statistics	5	Exam	
Intercultural and Ethical Decision-Making	DLBCSIDM01	Intercultural and Ethical Decision-Making	5	Written Assessment: Case Study	
Mathematics: Linear Algebra	DLBDSMFLA01	Mathematics: Linear Algebra	5	Exam	
System Pentesting Basics	DLBCSESPB01_E	System Pentesting Basics	5	Exam	
Introduction to Data Protection and Cyber Security	DLBCSIDPITS01	Introduction to Data Protection and Cyber Security	5	Exam	
Collaborative Work	DLBCSCW01	Collaborative Work	5	Oral Assignment	
Introduction to the Internet of Things	DLBINGEIT01_E	Introduction to the Internet of Things	5	Exam	
Introduction to Network Forensics*	DLBCSEINF01_E	Introduction to Network Forensics*	5	Exam	
Object-oriented Programming with Java	DLBCSOOPJ01	Object-oriented Programming with Java	5	Exam	
Cloud Computing	DLBDSCC01	Cloud Computing	5	Exam	
Algorithms, Data Structures, and Programming Languages	DLBCSL01-01	Algorithms, Data Structures, and Programming Languages	5	Exam/Advanced Workbook	
IT Law	DLBCSIITL01	IT Law	5	Written Assessment: Case Study	
Host and Software Forensics*	DLBCSEHSF01_E	Host and Software Forensics*	5	Exam	
Theoretical Computer Sciences and Mathematical Logic	DLBCSTCSML01	Theoretical Computer Sciences and Mathematical Logic	5	Exam	
IT Project Management	DLBCSEITPAM01	IT Project Management	5	Exam	
IT Service Management	DLBCSITSM01-02	IT Service Management	5	Exam	
DevSecOps and Common Software Weaknesses*	DLBCSEDCSW01_E	DevSecOps and Common Software Weaknesses*	5	Written Assessment: Written Assignment	
Cryptography	DLBCSCT01-01	Cryptography	5	Written Assessment: Case Study	
Information Security Standards	DLBCSEISS01_E	Information Security Standards	5	Written Assessment: Case Study	
Artificial Intelligence	DLBDSEAIS01	Artificial Intelligence	5	Exam	
Advanced Data Analysis	DLBDSEDA01	Advanced Data Analysis	5	Exam	
Project: Data Analysis	DLBDSEDA02	Project: Data Analysis	5	Portfolio	
Seminar: Current Topics in Computer Science	DLBCSSCTCS01	Seminar: Current Topics in Computer Science	5	Written Assessment: Research Essay	
ELECTIVE A-		e.g. Security in Complex Networks	10		
ELECTIVE B-		e.g. Cloud Security	10		
ELECTIVE C-		e.g. Smart Factory	10		
Bachelor Thesis		Bachelor Thesis	9	BachelorThesis	
		Thesis Defense	1	Presentation: Colloquium	

~ 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.

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

Note: 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.