

College of Information Technology
Bachelor of Science in Information Technology – Major in Cybersecurity

COURSE No.	UNIVERSITY REQUIREMENTS (30 CREDIT HOURS)	PREREQUISITE	CO-REQUISITE	CH
COMM 103	Language and Communication	None	None	3
HIST 103	History of Qatar	None	None	3
LAWC 305	Governance	None	None	3
SOCI 102	Islamic and World Cultures	None	None	3
UNIV 101	University Success	None	None	3
UNIV 201	Leadership, Entrepreneurship, and Innovation	None	None	3
ENGL 114	English Composition I	None	None	3
ENGL 115	English Composition II	ENGL 114	None	3
STDE 201	Sustainable Development	None	None	3
Foreign Language	Foreign Language Requirement	None	None	3
COURSE No.	MAJOR REQUIREMENTS (33 CREDIT HOURS)	PREREQUISITE	CO-REQUISITE	CH
ITCS 203	Cybersecurity Programming Cybersecurity Programming Lab	ITCC 204	None	3
ITCS 311	Cryptography	ITCC 102	None	3
ITCC 301	Operating Systems *	ITCC 104 ITCC 201	ITCC 104 ITCC 201	3
ITCS 316	Web Development Web Development Lab	ITCS 203	None	3

COURSE No.	COLLEGE REQUIREMENTS (48 CREDIT HOURS)	PREREQUISITE	CO-REQUISITE	CH
ITCC 102	Discrete Mathematics	None	None	3
ITCC 204	Computer Programming Computer Programming Lab	None	None	3
ITCC 105	Calculus	None	None	3
ITCC 101	Linear Algebra *	ITCC 105	ITCC 105	3
ITCC 250	Object-Oriented Programming Object-Oriented Programming Lab	ITCC 204	None	3
ITCC 201	Data Structures *	ITCC 250	ITCC 250	3
STAT 201	Probability and Statistics *	ITCC 105	ITCC 105	3
ITCC 104	Fundamentals of Information Technology	None	None	3
ITCC 103	Algorithms and Problem Solving *	ITCC 201	ITCC 201	3
ITCC 106	Ethics and Professional Responsibilities	None	None	3
ITCC 306	Database Systems * Database Systems Lab	ITCC 250	ITCC 250	3
ITCC 307	Software Engineering	ITCC 250	ITCC 250	3
ITCS 303	Networks * Networks Lab	ITCC 104	ITCC 104	3
ITAI 201	Introduction to Artificial Intelligence *	ITCC 204	ITCC 204	3
ITCC 400	Practical Training	ITCC 307, and should pass at least 75 CH	None	3

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ITCS 317	Principles of Cybersecurity *	ITCS 303	ITCS 303	3
ITCS 310	Network Security	ITCS 303	None	3
ITCS 312	Malware Analysis	ITCC 301	None	3
ITCS 416	Information Assurance Compliance, Audit, and Risk Management	None	None	3
ITCS 407	Ethical Hacking and Penetration Testing	ITCS 310, ITCS 316	ITCS 310, ITCS 316	3
ITCS 417	Digital Forensics *	ITCC 301, ITCS 303	ITCC 301, ITCS 303	3
ITCS 401	Cyber-Physical Systems Security *	ITCS 310	ITCS 310	3

(*) The student can request to register for the course concurrently with the pre-requisite.

ITCC 403	Graduation Project	ITCC 307, and should pass at least 81 CH	None	3
COURSE No.	MAJOR ELECTIVE COURSES (9 CREDIT HOURS)	PREREQUISITE	CO- REQUISITE	CH
ITCS 315	Special Topics in Cybersecurity	None	None	3
ITCS 415	Blockchain Technology	ITCC 201, ITCS 311	None	3
ITCS 411	Risk Management	ITCS 317, ITCS 416	None	3
ITCS 412	Multimedia Security	ITCC 201, ITCS 310 ITCS 311	None	3
ITCS 413	Secure Systems Analysis and Design	ITCC 306, ITCC 307	None	3
ITCS 414	Wireless Networks and Security	ITCS 310	None	3
ITEC 304	Cloud Computing *	ITCS 303	ITCS 303	3
ITEC 305	IT Project Management and Entrepreneurship	None	None	3
ITEC 403	Mobile Applications Development *	ITCC 250	None	3
ITEC 303	Data Analytics *	ITAI 201	ITAI 201	3

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Academic Year 1 (30)					
Semester 1 - Fall Semester			Semester 2 - Spring Semester		
Course no	Course Title	CH	Course no	Course Title	CH
ITCC 105	Calculus	3	ITCC 250	Object-Oriented Programming	3
ITCC 204	Computer Programming	3	ITCC 250	Object-Oriented Programming Lab	0
ITCC 204	Computer Programming Lab	0	ITCC 101	Linear Algebra	3
ITCC 102	Discrete Mathematics	3	ITCC 104	Fundamentals of Information Technology	3
HIST 103	History of Qatar	3	UNIV 101	University Success	3
ENGL 114	English Composition I	3	ENGL 115	English Composition II	3
Total Credit Hours = 15			Total Credit Hours = 15		

Academic Year 2 (30)					
Semester 1 - Fall Semester			Semester 2 - Spring Semester		
Course no	Course Title	CH	Course no	Course Title	CH
ITCC 201	Data Structures	3	ITCC 103	Algorithms and Problem Solving	3
ITCS 203	Cybersecurity Programming	3	ITCC 306	Database Systems	3
ITCS 203	Cybersecurity Programming Lab	0	ITCC 306	Database Systems Lab	0
STAT 201	Probability and Statistics	3	ITAI 201	Introduction to Artificial Intelligence	3
ITCC 106	Ethics and Professional Responsibilities	3	UNIV 201	Leadership, Entrepreneurship, and Innovation	3
COMM 103	Language and Communication	3	STDE 201	Sustainable Development	3
Total Credit Hours = 15			Total Credit Hours = 15		

Academic Year 3 (30)					
Semester 1 - Fall Semester			Semester 2 - Spring Semester		
Course no	Course Title	CH	Course no	Course Title	CH

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ITCS 303	Networks	3	ITCS 317	Principles of Cybersecurity	3
ITCS 303	Networks lab	0	ITCS 310	Network Security	3
ITCC 307	Software Engineering	3	ITCS 312	Malware Analysis	3
ITCS 311	Cryptography	3	<u>Major Elec</u>	<u>Major Elective</u>	3
ITCC 301	Operating Systems	3	Foreign Language	Foreign Language Requirement	3
ITCS 316	Web Development	3			
ITCS 316	Web Development Lab	0			
Total Credit Hours = 15			Total Credit Hours = 15		

ITCC 400 Practical Training Total Credit Hours =3					
Academic Year 4 (30)					
Semester 1 - Fall Semester			Semester 2 - Spring Semester		
Course no	Course Title	CH	Course no	Course Title	CH
ITCC 403	Graduation Project	3	<u>Major Elec</u>	<u>Major Elective</u>	3
ITCS 401	Cyber-Physical Systems Security	3	ITCS 407	Ethical Hacking and Penetration Testing	3
ITCS 416	Information Assurance Compliance, Audit, and Risk Management	3	<u>Major Elec</u>	<u>Major Elective</u>	3
ITCS 417	Digital Forensics	3	SOCI 102	Islamic and World Culture	3
LAWC 305	Governance	3			
Total Credit Hours = 15			Total Credit Hours = 12		

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Equivalence Table for Cybersecurity:

Deleted Course ID	Deleted Course Title	Equivalent Course ID	Equivalent Course Title
Free Elective	Free Elective	ITCC 105	Calculus
ITCC 205	Digital Design	ITCC 104	Fundamentals of Information Technology
ITCC 110	Fourth Industrial Revolution	ITAI 201	Introduction to Artificial Intelligence
ITCC 303	IT Innovation and Entrepreneurship	ITCC 307	Software Engineering
ITCC 401	Graduation Project I	ITCC 400	Practical Training
ITCC 402	Graduation Project II	ITCC 403	Graduation Project
ITCS 303	Networks	ITCS 303	Offered as a college core requirement
ITCS 304	Secure Communication Protocols	ITCS 407	Ethical Hacking and Penetration Testing
ITCS 308	Data Integrity and Authentication	ITCS 316	Web Development
ITCS 309	Security in Blockchain and Fintech	ITCS 311	Cryptography

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ITCS 402	Data and Software Security	ITCS 312	Malware Analysis
ITCS 406	Cloud Computing Security	ITCS 416	Information Assurance Compliance, Audit, and Risk Management