Zarqa University
Skills Matrix
Cybersecurity

Optional Specialization Requirements (9 Cr.Hrs)
Mandatory Specialization Requirements (66 Cr.Hrs)
Supporting Specialization Requirements (6 Cr.Hrs)

Compulsory University Requirements (18 Cr.Hrs)
Faculty Requirements (21 Cr.Hrs)
Elective University Requirements (9 Cr.Hrs)

Skills VS. Courses	First Year												Second Year												Third Year												Fourth Year											
	Level Exam (Arabic, English, Computer)	Compulsory university requirement	Compulsory university requirement	University Elective Course	Support requirement (Statistics and Probabilities)	Computer Programming 1	Programming Lab 1	Computer Programming 2	Programming Lab. 2	Web Programming (1)	Web Lab 1	Digital Logic Design	Compulsory university requirement	Compulsory university requirement	University Elective Course	Selected Programming Language	Introduction to artificial Intelligence	Introduction to Software Engineering	Cybersecurity Fundamentals	Web Programming 2	Discrete Mathematics	Data Structures	Design and Analysis of algorithms	Support requirement (Linear Algebra 1)	Wireless Networks	Database Systems	Networks and Information security	Department Elective Course	System Analysis	Computer networks	Smart Phone Programming	Data Mining and Warehousing	Cryptography Theory	Programming for Cybersecurity	Secure Communication Protocols	Compulsory university requirement	Department Elective Course	Project in Cybersecurity	Internship in Cybersecurity	Linux OS Security Findamentals	Department Elective Course	Internet of Things	Introduction to Data Science	University Elective Course	Compulsory university requirement	Introduction to Digital Evidence	Ethical Hacking in Cybersecurity	Free Requirement	Seminar
A. Knowledge and understanding of:																																															
Mathematics																																															
A1. Mathematical and statistical methods appropriate to CS.					X						X					X							X	X			X	X					X		X										
Hardware																																															
A2. Computer architecture and construction.												X							X														X		X				X				X			
A3. Basic electronics and logic design.												X																						X		X				X				X			
Software																																															
A5. Programming languages.						X	X	X	X	X						X										X						X				X	X					X			
A6. Cybersecurity Software tools and packages.																			X		X	X				X						X	X	X		X	X	X				X	X		
A7. Network Security applications																			X		X	X				X						X	X	X		X	X	X				X	X		
A8. Structuring of data and information.																			X	X					X	X						X	X	X		X	X	X				X	X		
Communication																																															
A9. Computer networks and distributed systems.																									X		X			X				X		X				X		X				
A10. Operating systems.																																		X		X						X				
Theory																																															
A11. Algorithm design and analysis.																X	X			X			X						X				X	X					X						
A12. Modeling and frameworks.																																															
A13. Analysis, prediction, and generalization.																							X		X				X					X	X	X			X	X			X	X		
B. Practical skills – students will be able to:																																															
B1. Specify, analyze, design, and implement intelligent computer-based systems.																		X			X		X						X				X	X	X			X	X		X		X	X		X
B2. Deploy effectively the computer tools to solve practical problems.																X													X				X		X			X	X				X	X		X
B3. Operate computing equipments effectively.																													X				X		X			X	X				X	X		X
C. Cognitive skills – students will be able to:																																															
C1. Demonstrate knowledge understanding of essential facts and concepts in computing.																	X	X	X				X		X				X				X	X		X		X	X				X	X	X	X
C2. Model, design, and evaluate a computer-based system.																	X									X			X				X	X	X			X	X				X	X		X
C3. Recognize and analyze criteria and specifications appropriate to specific problems.						X	X	X	X	X						X		X	X			X	X		X		X			X			X	X				X	X				X	X		X
C4. Deploy appropriate theory, practice, and tools to solve real problems.																				X	X	X			X	X	X			X			X	X	X		X	X	X			X	X		X	X	X	
C5. Recognize the professional, moral, and ethical issues related to work.	X		X		X										X				X									X		X			X	X	X	X		X	X				X	X			
D. General transferable skills – students will be able to:																																															
D1. Effectively communicate both orally and in writing using appropriate tools.				X	X									X	X				X						X				X				X	X		X		X	X				X	X		
D2. Work effectively as part of a team.																X			X						X	X			X		X		X	X				X	X				X			
D3. Effective use of general IT facilities.																			X						X	X			X	X		X	X	X		X		X	X				X	X		
D4. Do independent learning and continue professional development.																			X			X							X	X			X				X	X				X	X		
D5. Communicate and present logical argument related to computing.																X	X		X						X				X				X				X	X				X	X		
D6. Employ scientific methods in the solution of problems.						X	X	X	X	X									X			X	X		X	X			X				X	X			X	X				X	X		