

Scheme of Studies BS Computer Science (Specialisation in Cyber Security)

First Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hours			Course Code	Course Title	Credit Hours		
		Th	Pr	Total			Th	Pr	Total
CT-175	Programming Fundamentals	3	1	4	CS-251	Logic Design & Switching Theory.	3	1	4
CT-174	Fundamentals of Information Technology	2	1	3	CT-162	Discrete Structures.	3	0	3
EA-104	Functional English	3	0	3	CT-260	Object Oriented Programming.	3	1	4
PH-122	Applied Physics.	3	1	4	MT-171	Differential & Integral Calculus	3	0	3
ES-205	Islamic Studies. OR	2	0	2	ES-105	Pakistan Studies. OR	2	0	2
ES-209	Ethical Behaviour.				ES-127	Pakistan Studies. (For Foreigners)			
MT-001	Mathematics-1 (Pre-Medical)	-	-	NC	MT-002	Mathematics-2 (Pre-Medical)	-	-	NC

Second Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hours			Course Code	Course Title	Credit Hours		
		Th	Pr	Total			Th	Pr	Total
CT-159	Data Structure Algorithms & Applications.	3	1	4	CS-252	Computer Architecture & Organization.	3	1	4
MT-227	Differential Equations.	3	0	3	CT-261	Database Management Systems.	3	1	4
EA-115	Academic Reading and Writing	3	0	3	EA-218	Business Communication	2	1	3
EA-219	Professional Ethics	2	0	2	MT-272	Linear Algebra & Geometry.	3	0	3
CT-xxx	Cyber Security Elective - I	2	1	3	EC-209	Financial & Cost Accounting.	3	0	3
					EA-200	Community Service	-	-	NC

Third Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hours			Course Code	Course Title	Credit Hours		
		Th	Pr	Total			Th	Pr	Total
CT-363	Design and Analysis of Algorithms	3	0	3	CT-371	Vulnerability Assessment & Reverse Engineering	3	1	4
CT-365	Software Engineering	3	0	3	CT-361	Artificial Intelligence & Expert Systems	3	1	4
CT-353	Operating Systems	3	1	4	CT-476	Information Assurance	3	0	3
CT-xxx	Data Science Elective - II	3	0	3	CT-xxx	Cyber Security Elective - III	3	0	3
CT-355	Information Security	3	0	3	CT-376	Computer Communication Networks	3	1	4
					EA/ES-xxx	Foreign Language - I	-	-	NC

Final Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hours			Course Code	Course Title	Credit Hours		
		Th	Pr	Total			Th	Pr	Total
CT-486	Network & Information Security	3	1	4	CT-477	Secure Software Design & Development	3	1	4
MG-482	Organisational Behaviour	3	0	3	MG-481	Entrepreneurship.	3	0	3
CT-xxx	Cyber Security Elective - IV	3	0	3	CT-478	Digital Forensics	2	1	3
CT-499	Computer Science Project.	-	3	3	CT-xxx	Cyber Security Elective - V	3	0	3
CS-428	Parallel & Distributed Computing	3	1	4	CT-499	Computer Science Project.	0	3	3
EA/ES-xxx	Foreign Language - II	-	-	NC					

Elective- I Courses	
CT-263	Object Oriented Analysis & Design
CT-264	Programming for Artificial Intelligence
CT-368	Fundamentals of Data Science
CT-266	Fundamentals of Cybersecurity
CT-267	Fundamentals of Game Development

Elective- V Courses	
CT-480	Malware Analysis
CT-483	Quantum Security

Elective- II Courses	
CT-374	Cyber Security Laws & Regulations
CT-375	Cryptography and Cryptanalysis

Foreign Language - I Courses	
EA-220	Chinese Language - I
EA-231	Turkish Language - I
EA-224	German Language - I
EA-226	French Language - I
ES-221	Arabic Language - I

Elective- III Courses	
CT-372	Wireless and Mobile Security
CT-373	Penetration Testing

Foreign Language - II Courses	
EA-221	Chinese Language - II
EA-232	Turkish Language - II
EA-225	German Language - II
EA-227	French Language - II
ES-222	Arabic Language - II

Elective- IV Courses	
CT-479	Hardware Security
CT-482	Embedded Systems Security