جامعة اليرموك
Yarmouk University
كلية تكنولوجيا المعلومات وعلوم الحاسوب
Faculty of Information Technology and Computer Sciences

Document Approval Date	Study Plan	Document Code
		AP02-PR04

Department: Information Technology	Program: CyberSecurity	Official Stamp
The study plan was approved by the decision of the Deans' Council no. ...... on		

Overview
The Bachelor's Program in Cyber Security was established in the academic year 2019/2020 in line with the university's plans to keep abreast of the latest developments and developments in various sciences. The cyber security program has been localized in the Information Technology Department of the College of Information Technology and Computer Science. The cyber security program is considered one of the new and pioneering academic programs in the field of information technology at the local, Arab and international levels.
The field of cyber security is one of the vital areas in information technology and is considered one of the basic building blocks in the telecommunications and information technology sector due to the increasing spread of the Internet and its various applications, telecommunications and cloud computing, which in turn led to the emergence of many electronic security threats. Information systems, which include information systems, networks and data, have been classified as one of the main pillars in developed countries that must be protected and preserved. Many developed countries consider cyber security as one of the main pillars of national security.
The cyber security program provides students with the necessary knowledge to protect information systems, data and information networks and to fortify them against intrusion attempts and various electronic attacks. This specialization provides an integrated mix between information systems and their security, as the aspect related to information systems is concerned with everything related to the design, construction and programming of information systems and communication networks , as for the aspect related to information security, it focuses on the risks that threaten or attack information and networks by providing the necessary tools and means to protect the information and specifying the standards and measures taken to prevent the information from reaching the hands of unauthorized persons to ensure the authenticity and validity of this information. Accordingly, the graduate of cyber security will be able to work (locally, regionally and globally) in all private and governmental sectors that require information security in their work.

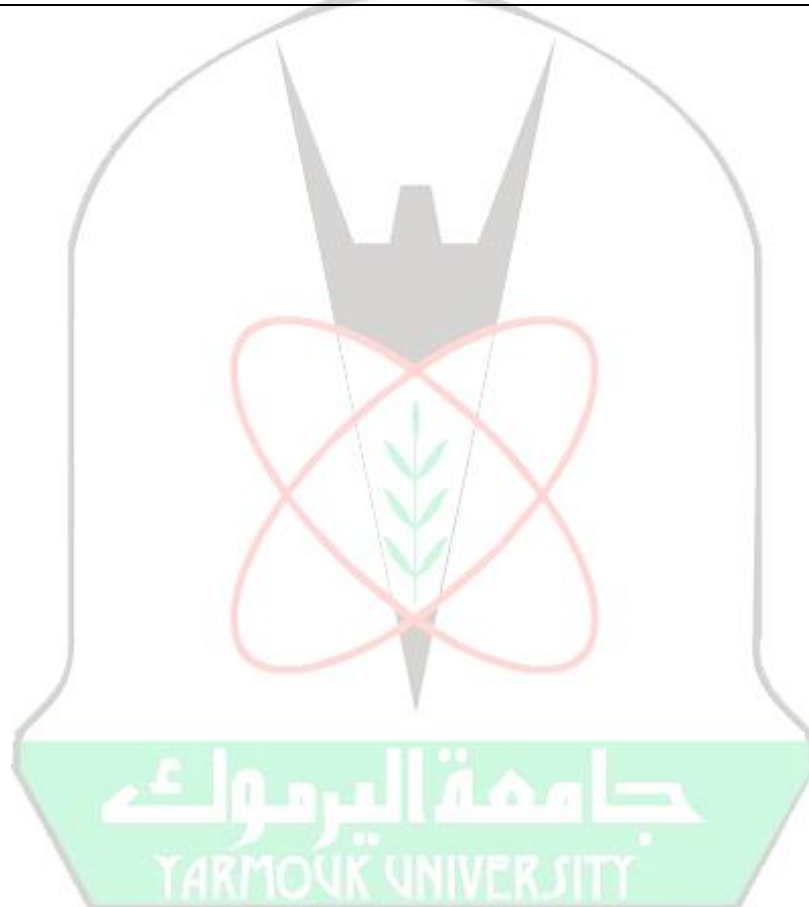| Vision and Mission	
Vision	Deliver leading and entrepreneur educational program in Cybersecurity on the local, regional, and global level.
Mission	Providing students with the necessary skills, knowledge, and competences to solve complex problems in different areas of cybersecurity by using distinguished teaching and learning process.

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Program Objective	
1	Prepare qualified and capable graduates to work in the field of cybersecurity that meets job market needs.
2	Develop technical professionals to manage and maintain the security of information systems and computer networks in the industry.
3	Encourage creativity and provide solutions to practical problems that benefit the national economy to make a positive impact on society.

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Program Learning Outcomes PLOs	
PLO1	Analyze a complex computing problem and to apply principles of computing and cybersecurity to identify secure solutions with less vulnerable to security attacks.
PLO2	Design, implement, and evaluate a computing-based solution to meet a given set of computing and security requirements in the context of cybersecurity.
PLO3	Communicate effectively in a variety of professional contexts.
PLO4	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
PLO5	Function effectively as a member or leader of a team engaged in activities appropriate to program's discipline.
PLO6	Apply and identify security principles and practices to maintain operations in the presence of risks and threats.
PLO7	Explaining the concepts and theories of information security and their applications, as well as classification of information security protocols, analysis and implementation of secure communication networks.

Credit hours to obtain a degree in Information Technology and Computer Sciences in a specialization of Cybersecurity			
	Credit Hours		
	Compulsory	**Elective**	**Total**
University Requirements	12	15	**27**
Faculty Requirements	22	0	**22**
Department Requirements	67	18	**85**
Total	**101**	**33**	**134**

First: University Compulsory Courses (12) Credit Hours						
Course Code	**Course No.**	**Course Name**	**Number of Credit Hours**			**Pre-requisite**
			Theoretical	**Practical**	**Total**	
AL	101	Arabic Language 1	3	0	3	-
EL	101	English Language Skills	3	0	3	-
PS	102	National Education	3	0	3	-
MILT	100	Military Sciences	3	0	3	-
EL	099	English Language Skills-Remedial	Remedial	0	0	-

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AL	099	Arabic Language- Remedial	Remedial	0	0	-
COMP	099	Computer Skills- Remedial	Remedial	0	0	-

Second: University Elective Courses (15) Credit Hours						
Course Code	**Course No.**	**Course Name**	**Number of Credit Hours**			**Pre-requisite**
			Theoretical	**Practical**	**Total**	
Hum	101	Basic of Mass Communication	3	0	3	-
Hum	102	Citizenship and Allegiance	3	0	3	-
Hum	103	Islamic: Intellect & Civilization	3	0	3	-
Hum	104	Arts and Behaviours	3	0	3	-
Hum	105	Jordan Contribution to Human Civilization	3	0	3	-
Hum	106	Introduction to Human Cultural Studies	3	0	3	-
Hum	107	Human Rights	3	0	3	-
Hum	108	Thinking Skills	3	0	3	-
Sci	101	Environment & Public Health	3	0	3	-
Sci	102	Information Technology and Society	3	0	3	-
Sci	103	Physical Education for All	3	0	3	-
Sci	104	Effective Communication Skills	3	0	3	-
Sci	105	Renewable Energy	3	0	3	-
Sci	106	Management and Society Development	3	0	3	-
Sci	107	Scientific Research	3	0	3	-

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Third: Faculty Compulsory Courses (22) Credit Hours

Course Code	Course No.	Course Name	Number of Credit Hours			Pre-requisite
			Theoretical	Practical	Total	
CS	111	Programming in a Selected Language	3	0	3	-
CS	111L	Programming in a Selected Language Lab	0	3	1	CS 111
MATH	101	Calculus (1)	3	0	3	-
CIS	101	Introduction to Information Systems	3	0	3	-
CIS	260	Database systems	3	0	3	CS 210 and CIS 101
STAT	111	Introduction to Probability (1)	3	0	3	-
BIT	106	Communication Skills for Information Technology	3	0	3	-
BIT	221	Legal Issues in Information Technology	3	0	3	BIT 106 and CIS 101

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Fourth: Department Compulsory Courses (67) Credit Hours

Course Code	Course No.	Course Name	Number of Credit Hours			Pre-requisite
			Theoretical	Practical	Total	
CYS	230	Cyber Security Principles	3	0	3	BIT 106, CIS 101
CYS	232	Introduction to Cryptography	3	0	3	CYS 230 & CS 142
CYS	321	Network Operating Systems	3	0	3	CS332
CYS	331	Risk Assessment and Management	3	0	3	CYS 230
CYS	333	Ethical Hacking	3	0	3	CS 210 & BIT 381
CYS	333L	Ethical Hacking Laboratory	0	3	1	CYS 333
CYS	334	Network Security	3	0	3	CS332
CYS	370	Network Programming and Monitoring	3	0	3	CS332
CYS	437	Data Privacy and Confidentiality	3	0	3	CIS 260 & CYS 230
CYS	440	Information Security Protocols	3	0	3	CYS 230 & CS332
CYS	461	Digital Forensics	3	0	3	CS 130 & CS332L
CYS	499	Graduation Project	3	0	3	Complete 98 Credits
CS	142	Discrete Structures	3	0	3	MATH 101
CS	210	Object Oriented Programming	3	0	3	CS 111
CS	250	Data Structures	3	0	3	CS 210
CIS	260L	Database Lab	0	3	1	CIS 260
CS	310	Advanced Programming	3	0	3	CS 210
BIT	381	Web Application Development (1)	3	0	3	CIS 260
CS	332	Data Communication and Networks	3	0	3	CYS 230
CS	332L	Data Communication and networks Laboratory	0	3	1	CS332
CS	351	Analysis and Design of Algorithms	3	0	3	CS 250 & CS 142
CIS	265	Database Management System	3	0	3	CIS 260

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CS	130	Fundamentals of Operating Systems	3	0	3	CS 111
MATH	322	Numerical Analysis (1) (for IT students)	3	0	3	CS 142

Fifth: Department Elective Courses (9) Credit Hours

Course Code	Course No.	Course Name	Number of Credit Hours			Pre-requisite
			Theoretical	Practical	Total	
CYS	332	Security of Software Systems	3	0	3	CYS 230, CS 210
CYS	335	Security of Internet of Things	3	0	3	CYS 330
CYS	436	Distributed Computing Security	3	0	3	CS 332, CYS 230
CYS	438	Cloud Computing Security	3	0	3	CYS 230
CYS	462	Defense Networking Systems	3	0	3	CYS 334
CYS	492	Special Topics in Network security	3	0	3	CYS 334
CYS	498	Practical Training	3	0	3	Complete 90 credits

Sixth: Department Elective Courses (6) Credit Hours- Faculty of IT

Course Code	Course No.	Course Name	Number of Credit Hours			Pre-requisite
			Theoretical	Practical	Total	
CIS	342	System Analysis and Design	3	0	3	CIS 260
CS	376	Artificial Intelligence	3	0	3	CS 351
CIS	467	Data Mining	3	0	3	CIS 260
BIT	364	System and Project Management	3	0	3	CIS 260
BIT	481	Web Application Development (2)	3	0	3	BIT 381

Eighth: Department Elective Courses (3) Credit Hours- Faculty of Science

Course	Course	Course Name	Number of Credit Hours	Pre-requisite

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Code	No.		Theoretical	Practical	Total	
STAT	101	Introduction to Statistics	3	0	3	-
MATH	241	Linear Algebra	3	0	3	MATH 101