جامعة الزيتونــة الأردنيــة
Al-Zaytoonah University of Jordan
كلية العلوم وتكنولوجيا المعلومات
Faculty of Science and IT

" عراقة وجودة"
"Tradition and Quality"

Study Plan for Bachelor program - Study Plan Development and Updating Procedures/ Cybersecurity Department	QF01/0407-4.0E

course Plan For Cybersecurity (Bachelor Program) No.: (2021/2022)		
Approved By Deans Council By Decision (09/19/2020-2021) Dated (28/07/2021)		
(133) Credit Hours	Study System / Hybrid Program	
Type Of Specialty	☐ **Humanitarian**	✓ **Scientific / Technical**	☐ **Medical Sciences**

Teaching Style	Percentage Of Study Plan Hours / Number	Model Used (Synchronous: Asynchronous)
Complete E-Learning Courses	10% - 20% Maximum / Number (27) C.H.	1:1 (For SAT. THER)
Blended Learning Courses (For Humanity)	40% - 60% Maximum / Number() C.H.	2:1 (For SUN. TUE. THER) Or 1:1 (For MON. WED.)
Blended Learning Courses (For Scientific And Medical)	30% -50% Maximum / Number (43) C.H.	1:1 (For SUN. TUE) or 1:1 (For MON. WED.)
Traditional Learning Courses (For Humanity)	20% Minimum / Number ( ) C H	3:0 For All Academic Divisions
Traditional Learning Courses (For Scientific And Medical)	30% Minimum / Number (63) C.H.	0:2 For All Academic Divisions

Important note: (The teaching patterns of the subjects are distributed at all academic levels in the program)

Program Educational Objectives for the B.S. in Cybersecurity

Three to four years after graduation from the BS in Cybersecurity program at Al-Zaytoonah University of Jordan , our graduates will:
1. Hold professional positions in a cybersecurity-related occupation, or pursue advanced study in cybersecurity or a related field of interest.
2. Be engaged professionals who provide technical leadership and service to their business, profession, or community.
3. Successfully adapt to new technologies, tools, and methodologies to remain current in their occupation.

Student Outcomes

Graduates of the program will have an ability to:
1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.

2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.

3. Communicate effectively in a variety of professional contexts.

4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.

5. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Apply security principles and practices to maintain operations in the presence of risks and threats. [CY]

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Knowledge	
K1	Knowledge of a broad and in-depth range of foundations, theories, principles and basic concepts in the field of cybersecurity
K2	Knowledge and understanding of the processes, tools, techniques, policies and practices used in cybersecurity
K3	Knowing, understanding and explaining the basic concepts of data networks, including components, layers, protocols, services, applications, and tools, and their relationship to cybersecurity.
K4	Knowing and understanding the analysis of mathematical problems and methods of designing algorithms and evaluating their effectiveness and knowledge of the various data structures, uses, advantages and disadvantages
K5	A wide range of specialized knowledge related to current and emerging developments and advanced topics in the field of cybersecurity
Skills	
S1	Analyze and evaluate various complex information in the field of cybersecurity.
S2	Critically evaluate, select, and use cybersecurity techniques, methodologies, and tools to solve problems, reduce risks, and perform cybersecurity work
S3	Performing a wide range of tasks and actions using cybersecurity tools in various complex operations; Creativity and innovation in this aspect
S4	Using computational operations and quantitative methods to process data and information in various complex cybersecurity contexts
S5	Using study, investigation, and research methodologies in cybersecurity projects and activities
Competences	
C1	Independently manage tasks related to cyber security, work collaboratively and constructively, have the ability to lead, entrepreneur, and perform a wide range of tasks responsibly
C2	Make constructive decisions in situations that require self-reliance to work, learn and innovate independently, and adhere to the ethics and standards of the profession for cybersecurity
C3	Active participation in the development of cybersecurity specialization and community service.

Teaching Style			Course No.	Course Name	Credit Hour	Theory Hours	Practical Hours	Prerequisite Co-Requisite	Indicative	
Fully Electronic Learning	Blended Learning	Traditional Learning							Semester	Year
1. Requirements (27) Credit Hours										
1.1 Mandatory Requirement (21) Credit Hours										
•			0420101	Military Sciences	3	3	0	…………………	1	1
•			0420151	National Education	3	3	0	…………………	2	1
•			0420271	Life Skills	3	3	0	…………………	1	2
•			0420115	Communication Skills in Arabic	3	3	0	Remedial Arabic Language	1	1
•			0420122	Communication Skills in English	3	3	0	Remedial English Language	2	1
•			0420261	Entrepreneurship and Innovation	3	3	0	…………………	2	2
•			0420241	Leadership And Social	3	3	0	………………..	1	2

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				Responsibility						

1.2 University Elective Requirements(6 Credit Hour)

			Course No.	Course name	Credit	Theory	Practical	Prerequisite Co-requisite	Semester	Year
•			0420142	Human Civilization	3	3	0	…………………	1	1
•			0420253	Development and Environment	3	3	0	…………………	1	2
•			0420172	Digital Skills	3	3	0	Remedial Computer Skills	2	1
•			0420201	First Aid	3	3	0	…………………	2	2
•			0420134	Sports and Health	3	3	0	…………………	1	1
•			0420212	Islamic Culture	3	3	0	…………………	1	2
•			0420392	Principals of Psychology	3	3	0		1	3
•			0420341	Principals of German Language	3	3	0		2	3

Teaching style			Course No.	Course name	Credit hour	Theory Hours	Practical Hours	Prerequisite Co-requisite	Indicative	
Fully electronic learning	Blended learning	Traditional learning							Semester	year

2. Faculty Requirements (24) Credit Hours

Fully electronic learning	Blended learning	Traditional learning	Course No.	Course name	Credit hour	Theory Hours	Practical Hours	Prerequisite Co-requisite	Semester	year
	•		0125130	Introduction to Information Technology	3	3	0	*Remedial Computer Skills	1	1
		•	0101140	Statistics and Probability	3	3	0	…………………	1	1
		•	0112110	Discrete Mathematics	3	3	0	…………………	1	1
	•		0114150	Professional Skills for Scientific Faculties	3	3	0	Introduction to Information Technology	2	1
		•	0101101	Calculus (1)	3	3	0	…………………	2	1
		•	0112120	Principles of Programming	3	2	2	Introduction to Information Technology	2	1
		•	0112220	Object Oriented Programming	3	3	2	Principles of Programming	1	2
		•	0125220	Internet Application Programming	3	2	2	Principles of Programming	2	2

Teaching Style			Course No.	Course Name	Credit Hour	Theory Hours	Practical Hours	Prerequisite Co-Requisite	Indicative	
Fully Electronic Learning	Blended Learning	Traditional Learning							Semester	Year

3. Requirements for A Major Family (30) Credit Hours

Fully Electronic Learning	Blended Learning	Traditional Learning	Course No.	Course Name	Credit Hour	Theory Hours	Practical Hours	Prerequisite Co-Requisite	Semester	Year
	•		0125131	Computer Networks (1)	3	3	0	Introduction to Information Technology	2	1
	•		0125231	Principles of Cybersecurity	3	3	0	Introduction to Information Technology	2	1

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Fully Electronic Learning	Blended Learning	Traditional Learning	Course No.	Course Name	Credit Hour	Theory Hours	Practical Hours	Prerequisite Co-Requisite	Semester	Year
	•		0125232	Data and Information Security	3	3	0	Principles of Cybersecurity	1	2
		•	0125233	Infrastructure Security Using Linux	3	2	2	Computer Networks (1)	1	2
	•		0125312	Data Structure and Algorithms	3	3	0	Object Oriented Programming	2	2
		•	0125323	Python for Cybersecurity	3	2	2	Object Oriented Programming	1	3
		•	0125334	Software Security	3	2	2	Data Integrity and Authentication	1	3
		•	0114324	Internet Application Development	3	2	2	Internet Application Programming	1	3
		•	0112333	Operating Systems	3	3	0	Computer Networks (2)	2	3
		•	0125435	Network Security	3	2	2	Secure Communication Protocols	1	4

Teaching Style			Course No.	Course Name	Credit Hour	Theory Hours	Practical Hours	Prerequisite Co-Requisite	Indicative	
Fully Electronic Learning	Blended Learning	Traditional Learning							Semester	Year

4. Major Requirements (52) Credit Hours

4.1 Mandatory Requirements (34) Credit Hours

Fully Electronic Learning	Blended Learning	Traditional Learning	Course No.	Course Name	Credit Hour	Theory Hours	Practical Hours	Prerequisite Co-Requisite	Semester	Year
		•	0112231	Digital Logic Design	3	3	0	Discrete Mathematics	2	1
		•	0125244	Cryptography	3	3	0	Principles of Cybersecurity	1	2
		•	0125248	Ethical Hacking in Cybersecurity	3	2	2	Infrastructure Security Using Linux / Secure Communication Protocols	2	2
	•		0125245	Computer Networks (2)	3	3	0	Computer Networks (1)	1	2
		•	0125241	Database Security	3	2	2	Object Oriented Programming	1	3
•			0125340	Data Analytics	3	3	0	Database and Security	2	3
•			0125346	Data Integrity and Authentication	3	3	0	Cryptography	2	3
		•	0125347	Secure Communication Protocols	3	2	2	Computer Networks (2)	1	3
		•	0125349	Digital Forensics	3	2	2	Software Security	2	3
•			0125481	Practical Training	3	0	0	Department Approval	1	4
•			0125471	Methodology for Building A Secure System	1	0	2	Department Approval	2	4
•			0125472	Graduate Project	3	0	0	Department Approval	2	4

4.2 Electives Requirements (9) Credit Hours

Fully Electronic Learning	Blended Learning	Traditional Learning	Course No.	Course Name	Credit Hour	Theory Hours	Practical Hours	Prerequisite Co-Requisite	Semester	Year
		•	0125371	Cybersecurity Tools and Techniques	3	2	2	Secure Communication Protocols	2	3
		•	0125361	Malicious Software (Malware)	3	2	2	Secure Communication Protocols	2	3
		•	0125362	Selected Topics in Cybersecurity	3	2	2	Department Approval	2	3

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	•		0125463	Artificial Intelligence in Cybersecurity	3	3	0	Data Analytics	1	4
		•	0125464	Access Control and Authentication	3	2	2	Software Security	1	4
		•	0125465	Cloud Computing Security	3	2	2	Network Security	2	4
		•	0125467	Operating Systems' Security	3	2	2	Operating Systems	2	4
	•		0125468	Policy, Legal, Ethics and Compliance	3	3	0	Data integrity and authentication	2	4
		•	0125443	Network Monitoring and Documentation	3	2	2	Secure Communication Protocols	1	4

4.3 Supporting Requirements (9) Credit Hours

		•	0101221	Linear Algebra	3	3	0	Statistics and Probability	1	2
	•		0101272	Numerical Analysis	3	3	0	Statistics and Probability	1	3
	•		0142231	Principles of Artificial Intelligence	3	3	0	Principles of Cybersecurity	1	3

The end of the study plan for the major students

Subjects taught in the major for students of other majors (university requirements, college requirements, major family requirements, support requirements)

Teaching Style			Course No.	Course Name	Credit Hour	Theory Hours	Practical Hours	The Type Of Requirement and The Recipient
Fully Electronic Learning	Blended Learning	Traditional Learning						
	•		0125130	Introduction to Information Technology	3	3	0	Faculty Requirement
		•	0125220	Internet Application Programming	3	2	2	Faculty Requirement
	•		0125131	Computer Networks (1)	3	3	0	Requirement for A Major Family(Computer Science and Software Engineering)
	•		0125232	Data and Information Security	3	3	0	Requirement for A Major Family(Computer Science)