

QF01/0408-4.0E	Course Plan for Bachelor program - Study Plan Development and Updating Procedures/ Cybersecurity Department
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Study plan No.	2022/2023	University Specialization	Cybersecurity
Course No.	0125323	Course name	Python for cybersecurity
Credit Hours	3 hours	Prerequisite Co-requisite	Object Oriented Programming
Course type	<input type="checkbox"/> MANDATORY UNIVERSITY REQUIREMENT <input type="checkbox"/> UNIVERSITY ELECTIVE REQUIREMENTS	<input type="checkbox"/> FACULTY MANDATORY REQUIREMENT <input type="checkbox"/> Support course family requirements	<input checked="" type="checkbox"/> Mandatory requirements <input type="checkbox"/> Elective requirements
Teaching style	<input type="checkbox"/> Full online learning	<input type="checkbox"/> Blended learning	<input checked="" type="checkbox"/> Traditional learning
Teaching model	<input type="checkbox"/> 2 Synchronous: 1asynchronous	<input type="checkbox"/> 2 face to face : 1synchronous	<input checked="" type="checkbox"/> 3 Traditional

Faculty member and study divisions' information (to be filled in each semester by the subject instructor)

Name	Academic rank	Office No.	Phone No.	E-mail	
Nesreen Hamad	Instructor	9316		nesreen.hamad@zuj.edu.jo	
Division number	Time	Place	Number of students	Teaching style	Approved model
1	12:30-14:00	9134	21	Traditional	-

Brief description

In this course, the basic and advanced concepts in Python language are introduced to write python scripts using variables, conditional statements, strings, methods, lists, tuples dictionary, etc. Additionally, it provides a basic introduction to some security libraries.

Learning resources

Course book information (Title, author, date of issue, publisher ... etc)	1. José Manuel Ortega, "Mastering Python for Networking and Security", Packt, 2020.			
Supportive learning resources (Books, databases, periodicals, software, applications, others)	2. Paul Deitel and Harvey Deitel, "Intro to Python for Computer Science and Data Science: Learning to Program with AI, Big Data and the Cloud", Pearson Education, 2020. 3. John Hunt, "A Beginners Guide to Python 3 Programming", Springer International Publishing, Aug 13, 2019			
Supporting websites	https://docs.python.org/			
The physical environment for teaching	<input checked="" type="checkbox"/> Class room	<input type="checkbox"/> labs	<input type="checkbox"/> Virtual educational platform	<input type="checkbox"/> Others
Necessary equipment and software	PyCharm : https://www.jetbrains.com/pycharm/ Or Anaconda: https://www.anaconda.com/			
Supporting people with special needs	-----			
For technical support	-----			

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Course learning outcomes (S= Skills, C= Competences K= Knowledge,)

No.	Course learning outcomes	The associated program learning output code
Knowledge		
K1	Understand the fundamentals of python such as variables, conditional statements, and functions.	MK2
K2	Processing Strings and Sequences.	MK2
K3	Utilizing security libraries in Python.	MK2
Skills		
S1	Knowledge of the structure and model of the Python programming language.	MS2
S2	Use the Python programming language for various programming applications.	MS2
S3	Develop software in the Python programming language for security applications using specific libraries.	MS2
Competences		
C1	The ability to write basic python scripts.	MC1
C2	The ability to process strings.	MC1
C3	The ability to write scripts using lists, tuples, and Dictionaries.	MC1
C4	The ability to apply python security libraries.	MC1

Mechanisms for direct evaluation of learning outcomes

Type of assessment/learning style	Fully electronic learning	Blended learning	Traditional Learning (Theory Learning)	Traditional Learning (Practical Learning)
First exam	0	0	%20	0
Second / midterm exam	%30	%30	%20	30%
Participation / practical applications	0	0	10	30%
Asynchronous interactive activities	%30	%30	0	0
final exam	%40	%40	%50	40%

Note: Asynchronous interactive activities are activities, tasks, projects, assignments, research, studies, projects, and work within student groups ... etc, which the student carries out on his own, through the virtual platform without a direct encounter with the subject teacher.

Schedule of simultaneous/face-to-face encounters and their topics

Week	Subject	learning style*	Reference **
1	Introduction to Python Programming	Lectures	RF1: 49-59
2	Control Statements and Program Development	Lectures	RF1: 73-119
3	Control Statements and Program Development	Lectures	RF11: 73-119
4	Strings: A deeper look	Lectures	RF1: 238-250
5	Functions	Lectures	RF1: 119-150
6	Sequences: Lists and Tuples	Lectures	RF1: 155-199
7	Dictionaries and Sets	Lectures	RF1: 155-199
8	Applications Midterm exam	Lectures	RF1: 155-199
9	Python Nmap	Lectures	Lecture Notes
10	Python Nmap	Lectures	Lecture Notes
11	Python sockets	Lectures	Lectures Notes
12	Python sockets	Lectures	Lectures Notes

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13	Python cryptography	Lectures	Lectures Notes
14	Python cryptography	Lectures	Lectures Notes
15	Applications	Lectures	-
16	Final Exam		

* Learning styles: Lecture, flipped learning, learning through projects, learning through problem-solving, participatory learning ... etc.

** Reference: Pages in a book, database, recorded lecture, content on the e-learning platform, video, website ... etc.