Science & IT
Faculty of Science & IT

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

"Tradition and Quality"

QF01/0408-4.0E	Course Plan for Bachelor program - Study Plan Development and Updating Procedures/ Department

Study plan No.	2021/2022	University Specialization	Software Engineering
Course No.	0114496	Course name	Special programming language
Credit Hours	3	Prerequisite Co-requisite	Department Approval

Course type	☐ MANDATORY UNIVERSITY REQUIREMENT	☐ UNIVERSITY ELECTIVE REQUIREMENTS	☐ FACULTY MANDATORY REQUIREMENT	☐ Support course family requirements	☐ Mandatory requirements	☐ Elective requirements
Teaching style	☐ Full online learning		☐ Blended learning		☐ Traditional learning	
Teaching model	☐ 2Synchronous: 1asynchronous		☐ 2 face to face : 1synchronous		☐ 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
Khalil Awad				Khalil.awad@zuj.edu.jo

Division number	Time	Place	Number of students	Teaching style	Approved model

Brief description

Python is a language with a simple syntax, and a powerful set of libraries. It is an interpreted language, with a rich programming environment, including a robust debugger and profiler. While it is easy for beginners to learn, it is widely used in many scientific areas for data exploration. This course is an introduction to the Python programming language for students without prior programming experience. We cover data types, control flow, object-oriented programming, and data analysis .

Learning resources

Course book information (Title, author, date of issue, publisher ... etc)	**Textbox 1:** Michael Urban, Joel Murach. **"Murach's Python Programming".** Mike Murach & Associate, Inc (2021)
Supportive learning resources (Books, databases, periodicals, software, applications, others)	**1 -** Scott Mccoy. **"Murach's Python for Data Analysis ".** Mike Murach & Associate, Inc (2021) **2-** Wes McKinney." **Python for Data Analysis: Data Wrangling with Pandas, NumPy, and IPython**" 2nd Edition . O'Reilly (2015) **3-** Mark Lutz. "**Learning Python, 5th Edition**". O'Reilly 2013
Supporting websites	None
The physical environment for teaching	☐ Class room ☐ labs ☐ Virtual educational platform ☐ Others
Necessary equipment and software	**Visual Studio Code or Jupiter**

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Supporting people with special needs	
For technical support	**E-learning Center and Computer Center Department**

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

No.	Course learning outcomes	The associated program learning output code
Knowledge		
K1	Explaining the basic principles of Python programming language	**MK4**
K2	Implementing object oriented concepts,	**MK4**
K3	develop the ability to write database applications in Python	**MK4**
K4	Working with pandas to gather, clean, prepare analyze and visualize data	**MK4**
Skills		
S1	An ability to gather, clean, prepare analyze and visualize data using python	**MS2**
S2	An Ability to use Python programming for solving problems	**MS2**
Competences		
C1	Ability to work with a data scientist within a team	**MC2**

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)
Midterm exam	30%	30%	**40%**	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, 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	**Chapter 1**: An introduction to Python Programming **Chapter 2:** How to write your first programming	**Traditional Learning**	**Text book 1** **Page:** 3-26 **Text book 1** **Page:** 27-63
2	**Chapter 3:** How to code control statement	**Traditional Learning**	**Text book 1** **Page:** 65 - 100
3	**Chapter 9:** How to work number	**Traditional Learning**	**Text book 1**

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	Chapter 10: How to work with strings **Chapter 11:** how to work with dates and times		**Page:** 255 – 272 **Page:** 275 – 300 **Page:** 303 – 325
4	**Chapter 4:** How to define and use functions and modules	**Traditional Learning**	**Text book 1** **Page:** 105 – 140
5	**Chapter 6:** How to work with lists and tuples	**Traditional Learning**	**Text book 1** **Page:** 163- 200
6	**Chapter 9:** How to work files I/O	**Traditional Learning**	**Text book 1** **Page:** 332-350
7	**Chapter 14:** How to define and use your own classes	**Traditional Learning**	**Text book 1** **Page:** 373 – 410
8	**Chapter 15:** How to work with inheritances	**Traditional Learning**	**Text book 1** **Page:** 413 – 440
9	**Chapter 16:** How to design an Object Oriented Program	**Traditional Learning**	**Text book 1** **Page:** 398 – 420
10	**Chapter 17:** How to work with database	**Traditional Learning**	**Text book 1** **Page:** 469 – 485
11	**Chapter 17:** How to work with database	**Traditional Learning**	**Text book 1** **Page:** 485 – 510
12	**Chapter 1** Introduction to python for data analysis **Chapter 2** The Panda essentials for data analysis **Chapter 3** The Panda essentials for data visualization	**Traditional Learning**	**Text book 1** **Page:** 3 – 100
13	**Chapter 4**: How to get data **Chapter 4**: How to clean data **Chapter 4**: How to prepare data	**Traditional Learning**	**Reference 1** **Page:** 196- 239
14	**Chapter 4**: How to Analyze data **Chapter 4**: How to Analyze time series data	**Traditional Learning**	**Reference 2** **Page:** 273- 305
15	**Chapter 13**: The forest fire case study	**Traditional Learning**	**Reference 2** **Page:** 441- 473
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.**

Schedule of asynchronous interactive activities (in the case of e-learning and blended learning)

Week	Task / activity	Reference	Expected results
1			
2			

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