



Jordan University of Science and Technology
Faculty of Computer & Information Technology
Software Engineering Department

SE412 Selected Programming Languages - JNQF Level: 7

Second Semester 2023-2024

Course Catalog

3 Credit Hours. This course introduces students to the art of computational problem solving using Python: It covers some of the essential Python datatypes such as Strings, Lists, Tuples, Sets and Dictionaries. It covers OOP concepts, Exceptions, and some of the advanced topics in python such as GUI Programming, Database Programming, Networking, Multiprocessing and Multithreading, etc. It gives an extra focus on some of the essential libraries required for data analysis such as NumPy, Pandas, Data Handling, Regular Expressions, Database Access, Data Manipulation, Data collection and sharing with various sources using standard formats including Simple text files, CSV files, JSON files and XML files. It provides students with the needed skills that will enable them to make productive use of computational techniques, including some of the data science tools and methods that are used for computational models and data interpretations. Students will develop confidence in their ability to apply programming techniques to problems in a broad range of computational concepts and practices. This course uses the Python 3 programming language (at least 3.10).

Teaching Method: On Campus

Text Book

Title	Starting Out with Python
Author(s)	Tony Gaddis
Edition	2nd Edition
Short Name	Ref no.1
Other Information	

Course References

Short name	Book name	Author(s)	Edition	Other Information
Ref no.2	Introduction to Computation and Programming Using Python: With Application to Understanding Data	John Guttag	2nd Edition	
Ref no.3	The Practice of Computing Using Python	William F. Punch & Richard Enbody	3rd Edition	

Instructor

Name	Miss Fatima Abuhjeela
Office Location	Engineering Building (N2 level 0)
Office Hours	Sun : 09:30 - 10:30 Mon : 10:00 - 11:30 Tue : 09:30 - 10:30 Tue : 11:30 - 12:30 Wed : 10:00 - 11:30
Email	fmabuhjeela@just.edu.jo

Class Schedule & Room

Section 1:
 Lecture Time: Mon, Wed : 08:30 - 10:00
 Room: E2117

Prerequisites

Line Number	Course Name	Prerequisite Type
1762100	SE210 Java Programming	Prerequisite / Study

Tentative List of Topics Covered

Weeks	Topic	References
Weeks 1, 2, 3	Introduction to Python, Control Flows, Functions, Strings	From Ref no.1 , From Ref no.3
Weeks 3, 4, 5	Data Structures: List & Tuples, Dictionaries & Sets, Built-in Functions.	From Ref no.1 , From Ref no.2 , From Ref no.3
Week 6	Reading and writing Text Files	From Ref no.1 , From Ref no.2

Week 7	Using JSON.	From Ref no.1 , From Ref no.2 , From Ref no.3
Weeks 8, 9, 10	Classes and Objects, Scope, Inheritance,	From Ref no.1 , From Ref no.2
Weeks 10, 11	Errors and Exceptions	From Ref no.1 , From Ref no.2
Weeks 12, 13, 14	GUI Concepts .	From Ref no.2
Weeks 15, 16	Python for Data Analysis.	From Ref no.2 , From Ref no.3

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Identify the major components of Python with their related methods and use them to design and develop application by applying Python Standard library , IO methods , how to use data types and the main control structures: selections and Repetitions. [1C12] [1L7K1]	20%	First Exam, Final Exam
Solve problem using different collections in python like strings,list,tuples,sets and using different files operation and using JSON files. [1C5, 1C15] [1L7S1]	30%	First Exam, Second Exam, Quizzes, Final Exam
Develop a program in python to solve different problem using programming techniques. [1C12] [1L7S3]	20%	First Exam, Second Exam, Quizzes, Final Exam
Use object oriented concepts and Exception handling, regular expressions, and graphics in solving problems . [1C13, 1C15] [1L7S1]	30%	Second Exam, Quizzes, Final Exam

Relationship to Program Outcomes (Out of 100%)																								
SM1p	SM2p	SM3p	EA1p	EA2p	EA3p	EA4p	D1p	D2p	D3p	D4p	D5p	D6p	ET1p	ET2p	ET3p	ET4p	ET5p	ET6p	EP1p	EP2p	EP3p	EP4p	EP5p	EP6p

Relationship to NQF Outcomes (Out of 100%)		
L7K1	L7S1	L7S3
20	60	20

Evaluation	
Assessment Tool	Weight
First Exam	25%
Second Exam	25%
Quizzes	10%
Final Exam	40%

Policy	
Course Policy	<p>1- Class lectures: Class lectures will expose students to the knowledge required by this course</p> <p>2- Class Discussions: Relevant issues will be discussed in class. These discussions are supposed to improve the students communication and problem solving skills by motivating them to express their opinions.</p> <p>3- Self-study: Students will be required to study one of the assigned chapters as self-study. A number of questions from the self-study chapter will be included in the exam. This learning method aims at improving the students' learning skills.</p>

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