



**Jordan University of Science and Technology**  
**Faculty of Computer & Information Technology**  
**Artificial Intelligence Department**

AI244 Artificial Intelligence Programming - JNQF Level: 7

First Semester 2023-2024

**Course Catalog**

3 Credit Hours. This course is designed to introduce students to Python programming language. Students will explore the concepts of programming and scripting, including basic syntax, variables, logical structures, and debugging. The course emphasizes structured programming, algorithmic and object thinking in a problem-driven way after teaching fundamental concepts and structures. Key topics include elementary programming, data types, strings, selections, iteration, functions, GUIs (graphical user interfaces), object-oriented paradigm, lists, sets and dictionaries, files, exceptions and recursion. By the end of the course, students will have a solid foundation in programming and gain practical experience in applying several techniques in practical tasks using various Python libraries.

**Text Book**

<b>Title</b>	Introduction to Programming Using Python
<b>Author(s)</b>	Y. Daniel Liang
<b>Edition</b>	1st Edition
<b>Short Name</b>	Textbook 1
<b>Other Information</b>	

**Course References**

Short name	Book name	Author(s)	Edition	Other Information
Textbook 2	Python Crash Course: A Hands-On, Project-Based Introduction to Programming	Eric Matthes	3rd Edition	
Ref #1	Introduction to Computation and Programming Using Python	John V. Guttag	3rd Edition	
Ref #2	Think Python: How to Think Like a Computer Scientist	Allen Downey	2nd Edition	

**Instructor**

Name	Dr. Farah AlShanik
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Office Location	-
Office Hours	Sun : 11:00 - 12:00 Mon : 14:00 - 15:00 Mon : 15:00 - 16:00 Tue : 11:00 - 12:00 Wed : 14:00 - 15:00 Wed : 15:00 - 16:00
Email	fmalsharik@just.edu.jo

Class Schedule & Room	
Section 1:	Lecture Time: Mon, Wed : 10:00 - 11:30 Room: G2120

Prerequisites		
Line Number	Course Name	Prerequisite Type
821013	HSS101CS Introduction To Programming	Prerequisite / Study
1731012	CS101 Introduction To Programming	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Basics of Python Programming	<b>Chapter 2</b> From <b>Textbook 1</b> , <b>Chapter 1</b> From <b>Textbook 2</b>
Weeks 2, 3	Selections and Loops	<b>Chapter 4 &amp; 5</b> From <b>Textbook 1</b> , <b>Chapter 5 &amp; 7</b> From <b>Textbook 2</b>
Week 4	Introducing Lists	<b>Chapters 10, 11, 14</b> From <b>Textbook 1</b> , <b>Chapters 3, 4, 6</b> From <b>Textbook 2</b>
Weeks 5, 6	Functions	<b>Chapters 3 &amp; 6</b> From <b>Textbook 1</b> , <b>Chapter 8</b> From <b>Textbook 2</b>
Weeks 7, 8, 9	Object-Oriented Programming	<b>Chapter 7</b> From <b>Textbook 1</b> , <b>Chapter 9</b> From <b>Textbook 2</b>
Weeks 10, 11	GUI Programming Using Tkinter	<b>Chapter 9</b> From <b>Textbook 1</b>
Week 12	Files and Exception Handling	<b>Chapter 13</b> From <b>Textbook 1</b> , <b>Chapter 10</b> From <b>Textbook 2</b>
Weeks 13, 14	Pygame	<b>Chapter 12</b> From <b>Textbook 2</b>
Weeks 13, 14	Project 1: A Ship That Fires Bullets	<b>Chapter 12</b> From <b>Textbook 2</b>
Weeks 14, 15	Finalizing Projects Work	<b>Chapter 18</b> From <b>Textbook 2</b>

<b>Mapping of Course Outcomes to Program Outcomes and NQF Outcomes</b>	<b>Course Outcome Weight (Out of 100%)</b>	<b>Assessment method</b>
Introduce Python programs with selection and iteration structures. [14SO1] [14L7K1]	14%	
Define functions and pass arguments in Python. [13SO1] [13L7K1]	13%	
Learn how to use lists, tuples, and dictionaries in Python programs. [13SO1] [13L7K1]	13%	
Discuss the fundamental principles of Object-Oriented programming. [10SO1] [10L7K1]	10%	
Learn how to practice GUI Programming with Tkinter libraries, read and write files, and handle exceptions. [20SO2] [20L7C2]	20%	
Implement Python projects using various libraries and tools, including Pygame, Numpy, matplotlib, scikit-learn, and Pygal. [15SO2] [15L7C2]	15%	
Gain LAB experience and practical techniques using Python to solve problems, explore real-world software development challenges, and create practical and contemporary applications. [15SO2] [15L7C2]	15%	

<b>Relationship to Program Student Outcomes (Out of 100%)</b>					
SO1	SO2	SO3	SO4	SO5	SO6
50	50				

<b>Relationship to NQF Outcomes (Out of 100%)</b>	
L7K1	L7C2
50	50

<b>Evaluation</b>	
<b>Assessment Tool</b>	<b>Weight</b>
Midterm Exam	30%
Final Exam	40%
LAB Work	15%
Pygame Project	15%

<b>Policy</b>	
Attendance	Attendance is very important for the course. In accordance with university policy, students missing more than 20% of total classes are subject to failure. Penalties may be assessed without regard to the student's performance. Attendance will be recorded at the beginning or end of each class.
LAB Quizzes	No makeup.

Assignments	Cheating is prohibited under JUST strict laws. No late submissions are accepted.
Exams	The format of exams is theoretical and practical including multiple-choice and problem solving questions.

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