LUMSx

# Python for Beginners

## LIVE ONLINE

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LUMSx is the center for online learning and professional development at LUMS. We extend LUMS' excellence in teaching and research beyond its borders by leveraging technology and innovative pedagogy. Our courses aim to bridge critical knowledge & skill gaps for Pakistani learners and to meet their diverse learning needs, we offer **Self-Paced Courses**, **Hybrid (Online-Cohort) Courses**, **Synchronous (Live-Online) Courses**, and **Free Open Online Courses** (OpenCourseWare). We intend to harness technology for enhancing access, improving educational quality, and amplifying education's impact.

**Course Format:** Live Online
**Language:** Bilingual
**Duration:** 6 Weeks

**Note:** For more details about the dates and pricing, please visit our website

🌐 VISIT COURSE PAGE

# ABOUT THIS COURSE

This beginner-friendly course introduces participants to the fundamentals of Python programming. Through interactive lessons, hands-on coding exercises, and real-world examples, learners will develop a strong foundation in Python syntax, data structures, control flow, and functions. The course also covers basic file handling, error handling, and an introduction to object-oriented programming (OOP). By the end of this course, participants will have the skills to write Python programs, analyze data, and implement real-world problem solutions with Python.

## What Will You Learn:

By the end of this course, you will be able to demonstrate the following learning outcomes:

- Understand and write basic Python syntax and expressions.
- Utilize Python's built-in data types and structures effectively
- Implement control flow statements (loops and conditionals) for logical decision-making.
- Define and use functions to write modular code.
- Handle files and exceptions for robust data processing.
- Apply Python programming concepts to solve real-world problems.

# MEET YOUR INSTRUCTOR

Course Instructor

## DR. WAQAS JAVED

*Head of Data Analytics and AI,*
*Bank of Punjab*

Dr. Waqas Javed is the Head of Data Analytics and AI at the Bank of Punjab. He holds a PhD in Electrical and Computer Engineering, specializing in data analytics, from Purdue University, USA. He has also authored several research papers and holds multiple technology patents.

# COURSE OUTLINE

| Module | Key Topics |
|---|---|
| **Module 0: Introduction Session** | <ul><li>Course overview</li><li>Course protocols</li><li>Instructor's Introduction</li><li>Learner expectations and introductions</li><li>Google Colab Intro and Account Setup</li></ul> |
| **Module 1: Getting Started with Python** | <ul><li>Installing Python, writing first script, basic syntax</li></ul> |
| **Module 2: Data Types and Variables** | <ul><li>Strings, variables, numbers, lists, tuples, sets, dictionaries</li></ul> |
| **Module 3: Control Flow** | <ul><li>If-else statements, loops, iterators</li></ul> |
| **Module 4: Functions and Modules** | <ul><li>Defining functions, using modules, built-in functions</li></ul> |
| **Module 5: File Handling and Exception Handling** | <ul><li>Reading/writing files, handling errors</li></ul> |
| **Module 6: Introduction to Python Modules** | <ul><li>Usage of Modules in Python</li></ul> |
| **Module 7: Intro NumPy Library** | <ul><li>Using NumPy for handling arrays</li></ul> |
| **Module 8: Intro to Pandas Library** | <ul><li>Using Pandas for handling complex data sets</li></ul> |
| **Module 9: Data Cleaning with Pandas** | <ul><li>Using Pandas for data cleansing and analysis</li></ul> |
| **Module 10: Data Visualization** | <ul><li>Using Matplotlib for plotting data</li></ul> |
| **Final Project & Course Wrap-up** | <ul><li>Real-world Python application, course recap</li></ul> |

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