University of Tripoli
Faculty of Information Technology
Department of Software Engineering

مواضيع مختارة **ITSE305**
Python Programming
S2025

INTRODUCTION

MODULE & LECTURER & LECTURES TIMES

▸ *ITSE305: **Python Programming***

▸ *Lecturer : **Lecturer Fatima Ali Ben Lashihar***

▸ Group A
   ▸ Saturday ------------   9:30 – 11:00 (Al-Biruni-2)
                        10:00 – 11:00 (Ramadan Schedule)
   ▸ Monday --------------   8:00 – 9:30 (Al-Biruni-2)
                         9:00 – 10:00(Ramadan Schedule)

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Who Can Learn Python?

▸ This module aims to help the beginners to understand the basics to advanced concepts of Python programming language. After completing this module, students will have a great level of expertise in Python programming.

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WHAT IS PYTHON?

▸ Python is a popular programming language. It was created by Guido van Rossum, and released in 1991.

▸ It is used for:

  ▸ web development (server-side),

  ▸ software development,

  ▸ mathematics,

  ▸ system scripting.

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WHAT CAN PYTHON DO?

▸ Python can be used on a server to create web applications.

▸ Python can be used alongside software to create workflows.

▸ Python can connect to database systems. It can also read and modify files.

▸ Python can be used to handle big data and perform complex mathematics.

▸ Python can be used for rapid prototyping, or for production-ready software development.

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FEATURES OF PYTHON

▸ **Easy-to-learn** − Python has few keywords, simple structure, and a clearly defined syntax. This allows the student to pick up the language quickly.

▸ **Easy-to-read** − Python code is more clearly defined and visible to the eyes.

▸ **Easy-to-maintain** − Python's source code is fairly easy-to-maintain.

▸ **A broad standard library** − Python's bulk of the library is very portable and cross-platform compatible on UNIX, Windows, and Macintosh.

▸ **Interactive Mode** − Python has support for an interactive mode that allows interactive testing and debugging of snippets of code.

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FEATURES OF PYTHON

- **Portable** − Python can run on a wide variety of hardware platforms and has the same interface on all platforms.
- **Extendable** − You can add low-level modules to the Python interpreter. These modules enable programmers to add to or customize their tools to be more efficient.
- **Databases** − Python provides interfaces to all major commercial databases.
- **GUI Programming** − Python supports GUI applications that can be created and ported to many system calls, libraries, and Windows systems, such as Windows MFC, Macintosh, and the X Window system of Unix.
- **Scalable** − Python provides a better structure and support for large programs than shell scripting

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WHY PYTHON?

- Python works on different platforms (Windows, Mac, Linux, Raspberry Pi, etc).
- Python has a simple syntax similar to the English language.
- Python has syntax that allows developers to write programs with fewer lines than some other programming languages.
- Python runs on an interpreter system, meaning that code can be executed as soon as it is written. This means that prototyping can be very quick.
- Python can be treated in a procedural way, an object-oriented way or a functional way.
- Python is open source, which means it's available free of cost.

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WHY PYTHON?

▸ Python is simple and so easy to learn.
▸ Python is versatile and can be used to create many different things.
▸ Python has powerful development libraries, including AI, ML, etc.
▸ Python is much in demand and ensures a high salary.

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GOOD TO KNOW

▸ The most recent major version of Python is Python 3.

▸ Python can be written in a text editor or possible in an Integrated Development Environment, such as Pycharm, Netbeans or Eclipse which are particularly useful when managing larger collections of Python files.

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PYTHON SYNTAX COMPARED TO OTHER PROGRAMMING LANGUAGES

▸ Python was designed for readability, and has some similarities to the English language with influence from mathematics.

▸ Python uses new lines to complete a command, as opposed to other programming languages which often use semicolons or parentheses.

▸ Python relies on indentation, using whitespace, to define scope; such as the scope of loops, functions and classes. Other programming languages often use curly-brackets for this purpose.

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APPLICATIONS OF PYTHON

▸ In Data Science, Python libraries like Numpy, Pandas, and Matplotlib are used for data analysis and visualization.

▸ Python frameworks like Django, and Pyramid, make the development and deployment of Web Applications easy.

▸ This programming language also extends its applications to computer vision and image processing.

▸ It is also favored in many tasks like Automation, Job Scheduling, GUI development, etc.

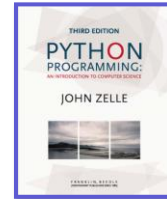▸ 12   by: Fatima Ben Lashihar
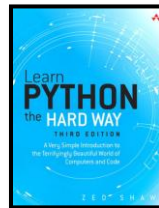
MODULE MATERIALS

▸ Recommended Textbook

  ▸ Python Crash Course
      2nd Edition
      by Eric Matthes

  ▸ Python Programming: An Introduction to
      Computer Science, 3rd Edition
      By John M. Zelle

  ▸ Learn Python The Hard Way
      3rd Edition
      by Zed A. Shaw

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MODULE MATERIALS

▸ Recommended Websites

  ▸ W3Schools

  ▸ Elzero Web School

  ▸ Tutorialspoint

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ASSESSMENT

Mid-term Exam	30%
Mid-term Lab Exam	10%
Assignments	10%
Final Exam	40%
Final Lab Exam	10%

▸ No grades for Presence, but zero as a whole if absent more than 25% of the semester.

CONTACT ME!!!

Please send:
    Full Name, ID and Module Code when contacting me, Via:

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