Course program and reading list

Semester 1 Year 2024

School: Arison School of Business B.A.

Python Programming

Lecturer:

Dr. Moses Miller moses.miller@runi.ac.il

Tutors:

Mr. Or Dabach or.dabach@post.runi.ac.il

Teaching Assistant:

Mr. Or Dabach or.dabach@post.runi.ac.il

Course No.:	Course Type :	Weekly Hours :	Credit:
4995	Lecture	2	4

Course Requirements :	Group Code :	Language:
Final Paper	241499500	English

Prerequisites

Students who took one of the courses listed below will not be allowed to register to the course Python Programming (4995):

2370 - Introduction to Programming

Course Description

"A language that doesn't affect the way you think about programming is not worth

knowing."

—

Alan J. Perlis
"The hottest new programming language is English."

—

unknown

In the dynamic landscape of today's digital business environment, computer applications have become ubiquitous. We continuously engage with these applications as consumers, managers, entrepreneurs, and creators. Therefore, understanding computational thinking and acquiring the skill to communicate with application developers effectively is indispensable for any manager.

Our course will delve into programming with Python, recognized as one of the most sought-after and versatile programming languages in the current market. Python's appeal lies in its straightforward syntax and comprehensive library offerings. This language is not only user-friendly for beginners. Still, it is also a powerful tool employed by numerous companies for various purposes, including website development, data analysis, machine learning, and natural language processing.

Throughout this course, we will cover the essentials of programming, including computational thinking, the foundational elements of computer programs, data types, functions, and more. Moreover, we will explore practical business applications, such as interacting with popular websites, transforming data into meaningful insights, and examining real-world business scenarios. This approach will provide a comprehensive understanding of how Python can be applied in various business contexts.

As students at the forefront of the modern educational landscape, you witness and participate in an extraordinary shift — the Artificial Intelligence Revolution. This groundbreaking transformation redefines the fabric of business and societal structures, heralding an era where AI's capabilities extend far beyond mere automation. AI-assisted programming is critical to this revolution, significantly enhancing the ability to transform abstract ideas into operational digital products. This evolving synergy between human creativity and AI efficiency underscores the increasing importance of coding skills. By equipping yourselves with data science and Python knowledge, you are not just learning a technical skill but preparing to actively engage in and benefit from the myriad opportunities this AI revolution presents. Embrace this journey, your gateway to shaping and excelling in a rapidly evolving digital world.

This course will utilize a blend of teaching methods, comprising online lectures via Zoom and recitation sessions conducted in a hybrid format — both in-class and through Zoom. To ensure accessibility and convenience, all lessons will be recorded and made available on the Moodle platform. While attending classes and recitations is not compulsory, you must take personal responsibility for your learning, ensuring you understand the course material and complete all assignments.

A significant emphasis will be placed on weekly self-learning and practice exercises at

home. Embracing a 'learning by doing' approach is crucial in programming; therefore, the course is designed to include numerous hands-on tasks to enhance your practical skills. The lessons are structured to be interactive, with coding challenges incorporated into the class sessions to engage and test your understanding in real time.



Course Goals

This course is designed for beginners and does not require any prior experience in programming or coding. It provides an in-depth introduction to fundamental programming concepts, including an understanding of data types, control structures, algorithm creation, and program design, all within the context of the Python programming language. We will explore various real-world coding applications, from problem-solving simulations to data analysis techniques.

A unique feature of this course is the incorporation of AI-assisted programming tools, such as ChatGPT, to enhance the learning process and facilitate quicker and more effective implementation of Python programming concepts. These tools accelerate learning and offer practical insights into the future of programming in a rapidly evolving digital landscape.

Selected Course Topics:

1. Understanding the Value of Programming
2. Setting Up and Navigating the Python Environment
3. Basics of Variables and Expressions
4. Writing Conditional Code
5. Creating and Utilizing Functions
6. Mastery of Loops and Iteration
7. Techniques for Handling Files
8. An Introduction to Advanced Python Topics
9. Utilizing APIs
10. Techniques for Fetching Data from the Web
11. Fundamentals of Data Analysis



Grading

Course Evaluation Criteria:

Final Project Requirement: To successfully pass this course, achieving a passing grade on the final project is mandatory. This significant project shows your comprehensive understanding and application of the course material.

Submission Guidelines and Deadlines: All coursework must be submitted via Moodle by the specified deadlines. Just so you know, late submissions will incur a penalty in terms of credit reduction and, in some cases, may not be accepted.

Assessment Breakdown:

1. **Homework Assignments (Individual Submission) - 40% of Final Grade:**
    - Assignments will be assigned throughout the course, focusing on various topics covered.
    - All homework is to be completed individually and submitted through Moodle.
2. **Final Project Deliverable (Individual or pairs Submission) - 20% of Final Grade:**
    - This aspect involves applying the concepts and techniques learned to a practical project, showcasing your programming abilities.
    - You will define the project's scope and desired outcomes. Specific guidelines will be provided during the course.
    - The deliverable, in the form of a PDF document, must be submitted on Moodle.
3. **Final Project Defense (Individual via Zoom) - 40% of Final Grade:**
    - Following submitting your final project deliverable, you will arrange a Zoom meeting with the course staff.
    - During this session, you will present a defense of your project, explaining your approach and answering questions related to your work and the course content.



Lecturer Office Hours

Dr. Moses (Moshik) Miller

Phone / WhatsApp - 0522810734

Email - moses.miller@runi.ac.il

Meeting: by appointment upon request.



Reading List

Recommended Course Resources:

1. Online Resources and Course Website Materials:

- Our course does not rely on a traditional textbook. Given the dynamic nature of programming and Python, numerous online resources offer current and comprehensive information. We will provide all necessary readings and resources through the course website, ensuring you have access to the most relevant and up-to-date material.

2. Supplementary Reading: "Think Python":

- For supplemental reading, "Think Python" is an excellent resource. It provides a

deeper understanding of Python in an accessible format. A free PDF version is available at Think Python PDF.

3. Laptop Requirement:

- You will use your laptops, either Mac or PC, in this course. Please bring your computer to every class for hands-on activities and programming practice.

4. Access to Presentations and Sample Files:

- All presentations and sample files used during the course will be available on the course website for easy access and reference.