



# INTRODUCTION TO PROGRAMMING WITH PYTHON

4 WEEK ONLINE CERTIFICATE COURSE

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COURSE FEE – CHF 490

START DATE: **MAY 4.2023**

REGISTER NOW: [info@alss-edu.ch](mailto:info@alss-edu.ch)

# Course Introduction

The course provides an introduction to basic concepts in programming with Python programming language. The topics are conveyed with examples that can be extended and altered by the students for further learning. Students will be given practice assignments after each session. The two hour sessions will be held online on the announced dates with an optional bonus session following the core sessions.

The course is designed and delivered by an international university instructor of Computer Engineering. It is being offered as an open course and can be attended by anyone who is, or aspires to get, involved in the industry of software development, or willing to understand the basic technical details in order to better communicate their ideas to developers.

## Course Outcomes

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Upon completion of this course, you should be able to:

- Install and use an integrated development environment (IDE)
- Implement graphical applications using Turtle library
- Use “for” loops for repetitive tasks
- Define and use variables
- Define and call functions for structured tasks at different parts of the program
- Perform mathematical calculations within a Python program
- Receive and process input from the users
- Use nested loops
- Define and use Lists, Tuples, and Dictionaries
- Design conditional workflows and use “if”, “else if”, “else” statements
- Construct compound logical statements using boolean operators
- Use “while” loops
- Consider algorithm complexity during solution design.

## Accreditation and certification

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The Academy of Leadership Sciences Switzerland (ALSS) is an international education institution that offers continuing education, further education, and post graduate advanced education courses, workshops and programs focusing on advanced studies in Leadership and Management. The ALSS also offers short courses that are not credit-bearing, and do not lead to formal qualifications. All attendees who attend all presentations of the *Crash Course on Introduction to Programming with Python* will be awarded certificates of successful attendance by the ALSS.

# Course Subjects

- Meeting Python and Integrated Development Environments (IDE)
- IDE Installation
- First Python Program
- Turtle Graphics Library
- "for" Loops to Repeat Instructions in Python
- Variables
- Assignment Statements and Operators
- Functions
- Coding Basics and Indentation
- Arithmetic Operations
- Input and Output Operations
- Type Casting
- Nested "for" Loops
- Lists, Tuples, and Dictionaries
- Control Flow, Decision with "if", "elif", and "else" Statements
- Boolean Operators
- Compound Logical Expressions
- "while" Loops
- Animating Shapes with Turtle
- Algorithm Performance Evaluation

# Course Structure

Week

1

Introduction to Python & Programming Environment (2 hours)

Meeting Python and Integrated Development Environments

(PyCharm, VSCode, Thonny)

PyCharm Installation

Using Turtle Graphics Library with Python

"for" Loops to Repeat Instructions in Python

Variables

Assignment Statements and Operators

<b>Week 2</b>	<b>Operations and Loops with Python (2 hours)</b> Functions Coding Basics and Indentation Arithmetic Operations
<b>Week 3</b>	<b>Data Structures and IO (2 hours)</b> Input and Output Operations Type Casting Nested "for" Loops Lists, Tuples, and Dictionaries
<b>Week 4</b>	<b>Logic and Decision Structures (2 hours)</b> Control Flow, Decision with "if", "elif", and "else" Statements Boolean Operators Compound Logical Expressions "while" Loops
<b>Bonus</b>	<b>Animation and Performance (2 hours)</b> Animating Shapes with Turtle Algorithm Performance Evaluation

<b>Duration of the Course:</b> 4 weeks ( <b>every Thursday two hours webinar at 6pm CET Time</b> )	<b>Language</b> English
<b>Start Date</b> <b>May 4.2023</b>	<b>Study Options</b> 100 % online per Zoom or other
<b>Admission Requirements</b> Anyone who is, or aspires to get, involved in the industry of software development can enroll for this course.  Internet access and an email address are required.	<b>Tutorial fees for the whole course</b> CHF 490 to be paid at least one week before the course starts.

# Course Leader



**Dr. Murat Özyurt, PhD**

Dr. Murat Özyurt is a computer engineering instructor. He has received his BS degree in computer engineering in 2005, MS degree in software engineering in 2008, and PhD degree in computer engineering in 2019 from Bogazici University. He has worked as a software engineer, architect, team lead in commercial projects as well as R&D project. He is also running his own companies for consultancy and development of software projects. Dr. Özyurt has been working with ALSS since 2023 on IT courses. He has also been lecturing in Bogazici University Computer Engineering Department since 2020 on Introduction to Programming Courses. Dr. Özyurt has assisted similar courses since 2016 with a specialized platform Teaching.Codes, which is designed to address lectures and automated evaluation and grading of student submissions in programming courses. Has has been generating programming courses contents and examples for Java and Python programming languages. His professional experience is based mostly on computer networks, telecommunications infrastructure planning projects, web applications, 3D applications, mobile games, etc. More detailed information about Dr. Özyurt can be found in <https://linkedin.com/in/muratozyurt>. Similarly his recent publications can be accessed through <https://www.researchgate.net/profile/Murat-Ozyurt-2>.