

Price: R7,200.00 excl. VAT
Duration: 4.5 days
Code: INTRO

Introduction to Computer Programming

Description

Learning to code is a valuable skill. Even if you don't want to be a career programmer, many of the programs you use every day can be programmed in some way to make your work faster and easier. This course is for people who have little or no programming experience. It introduces you to the fundamental building blocks of programming languages, and how to use them to write short programs. You will not be a programmer after 5 days, but you will have the essential foundation on which you can start building your skills.

Objectives

After you have completed the Introduction to Computer Programming course, you will:

- Understand different numbering systems and the principle of how computers store data.
- Understand how to use variables and constants to store values in a program.
- Understand the concept of data types and the role that data types play.
- Understand the different kinds of operators and how to use them in programming statements.
- Understand how conditional ("if") statements and iterative ("loop") statements work and when to use them.
- Understand the concept of a function or procedure, and how to pass data to it and get data returned from it.
- Write small scripts.
- Understand the role of testing, types of errors in programs, and how to handle errors.

Intended Audience

You should attend the Introduction to Computer Programming course if:

- You want to become a programmer and you need to first learn the basics.
- You want to learn how to write short scripts so that you can program or customise other applications.
- You want to have a better understanding of what programming is about.

Prerequisites

Before you attend the Introduction to Computer Programming course:

- You should be familiar with the concepts of files and folders on your computer.
- You should be able to use a simple text editor.
- You should understand and be able to perform simple maths calculations that make use of addition, subtraction, multiplication, division, exponentiation, comparisons and the use of Pi.

Course Contents

Introduction to Computers

- Computer architecture.
- Types of application software.

Programming languages

- The concept of a programming language.
- Classification of programming languages.

- Compilers and interpreters.
- Source code and object code.

Numbering systems

- Binary, octal, decimal and hexadecimal numbering systems.
- Converting data from one numbering system to another.
- Internal representation of numeric data.
- Internal representation of non-numeric data.

Building blocks of programming languages

- Variables and constants.
- Local and global scope.
- Data types.
- Arrays.
- Assignment operators.
- Comparison operators.
- Logical operators and the truth tables.
- Arithmetic operators.
- String operators.
- Operator precedence.
- Subroutines and functions.
- Built-in versus user-defined functions.
- Parameters and return values.
- Conditional statements.
- Iterative statements.
- Nesting.

Testing and Debugging

- Sources of errors.
- Errors relating to internal representation.
- Debugging and error handling.
- Testing.

Other Topics

- Introduction to Object Orientation.
- Introduction to relational databases.
- The Systems Development Life Cycle.

*** The lecturer reserves the right to modify the contents of the course to suit the needs of the delegates.*