Hanze University of Applied Sciences Groningen

Course: Fundaments of Programming — credits: 4

Course code	ELVP17AFPRO
Name	Fundaments of Programming
Study year	2020-2021
ECTS credits	4
Language	English
Coordinator	P.J. Kamphuis

Modes of delivery	Assignment Individual supervision Lecture Practical / Training
Assessments	Fundaments of Programming - Assignment

Learning outcomes

At the end of this study unit:

- The student visualises the logical steps of an algorithm with a flowchart / PSD in preparation for further implementation.
- The student implements the logic of the structure of a flowchart / PSD by using basic programming skills and techniques that are typical for a programming language (e.g. C). (variables , declarations, data types, constructions, statements)
- The student creates a clear, structured and documented programme by means of the application of subroutines.
- The student creates programmes which exchanges data with external sources (e.g. files, analogue / digital input and output).
- The student implements multidimensional arrays in order to store large amounts of data of the same data type.
- The student designs a basic GUI in order to control / visualise an automated process by means of an IDE.
- The student tests and debugs the programmes by designing and implementing a test plan.(modular testing , debugger , validation).

Content

In this study unit you will learn the fundaments of programming which will be the starting point of all the programming material throughout the program of Electrical Engineering, and will be used in various related study units, e.g. Object-Oriented Programming, Embedded Systems and Robotics.
You will start by logically analyzing a problem by means of its objectives and problem statement. Using basic programming skills, you will create structured programs that can exchange data with external sources/hardware and visualize/control the process using a user-friendly graphical interface (a GUI). You will learn how to store large amounts of data and test/debug your programs.

Included in programme(s)

Electrical Engineering Major Sensor Technology
Minor Technology to Create
Exchange Technology to Create (autumn)

School(s)

Institute of Engineering