



Research Programmes Board, FUN

Introduction to Programming, MEIPR1F

Introduktion till programmering

1,5 credits

Level F

General information

(No previous knowledge required. The course is intended for anyone who wants to use programming in their research and is offered first and foremost to doctoral students at the Faculty of Medicine. The course is subject to availability and open to doctoral students at another faculties, as well as other applicants of any level, but needs to be affiliated with Lund University.

Language of instruction

English

Learning outcomes

The purpose of the course is to give participants an introduction to how code works, how to read and understand different scripts, how to create their own programs and how to use freely available resources to implement them in their research.

After completing the course, the doctoral student has been given the opportunity to:

- Understand key concepts for computer language
- Write simple executable software
- Write macros in Excel and Image J
- Read and write scripts in Python
- Use online resources and be able to further develop their skills on their own

Aim

The aim of the course is that the doctoral student after completing the course should have had the opportunity to acquire the tools needed to be able to further develop their programming skills on their own.



Course content

The course will introduce students to the concepts and basic workings of computer code. They will develop an understanding how code works and the relation between different programming languages. Furthermore, the students will learn on two of the most widely used languages to write programs and scripts Visual Basic and Python. Students will understand some key concepts in coding such as loops, Boolean statements, if...then statements, variable declarations. Students will learn how to apply these concepts in real-(lab)-life situations. Finally, the students will learn on how to continue to develop their coding skills with online code repositories such as github and sourceforge.

During the course, the following concepts will be covered:

- Computer languages and algorithms
- Visual Basic and Python
- Variables and data types
- Debugging
- Conditional statements
- Loops
- Array- and string manipulations
- Macros

Course design

The course is carried out by actively participating in a number of lectures. Questions and assignments will be discussed on the topic of the previous lecture. To follow the progress of the participants an online tool will be used (www.socrative.com) where the lecturer receives immediate feedback on the doctoral students' progress, while the interactive coding format provides direct feedback to both students and teachers.

Assessment

Home exam

Grades

Grades awarded are Pass or Fail

Prerequisites

No

Reading list

Literature will be provided during the course.



FACULTY OF MEDICINE

Course syllabus

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