Course: Molecular Biology in Code — credits: 5

Course code	BFVP22MOLBIOCODE
Name	Molecular Biology in Code
Study year	2023-2024
ECTS credits	5
Language	Dutch, with parts in English
Coordinator	R. Wedema

Modes of delivery	Assignment Lecture Practical / Training Project-based learning
Assessments	Molecular Biology in Code - Other assessment

Learning outcomes

This module has the following learning outcomes:

You use terminal commands in the Linux Operating System to manipulate folders and files and invoke executable files.

You write Python code according to applicable standards.

You meaningfully use variables, flow-control and functions in Python.

You recognise and fix simple syntactic and logical errors in Python programs.

You implement a simple biological concept in code with an appropriate data model and algorithm.

You select a relevant database from the most common databases in bioinformatics to retrieve required types of information.

You provide constructive feedback to fellow students on Python code.

Content

The content of this module consists of 3 phases that you will go through.

In phase 1, you learn the basics of programming by working on a series of programming tasks that increase in complexity. After 3 weeks, you have to reach a certain level (indicated by an assignment number) and you get a go / no-go for the next phase.

In the 2nd phase, which again will last 3 weeks, you will work in alternating groups on varying assignments such as looking up information on nucleotide and amino acid sequences and on protein structures in commonly used databases, and write a simple parser (processing script) that can extract certain requested information from such a file format, or write out processed data in a similar format.

In the final phase, you will rebuild a self-selected existing bioinformatics programme in a group using your own script.

During this module, you will receive feedback on your code from the lecturer and group members.

Included in programme(s)

Bio-Informatics

School(s)

Institute for Life Science & Technology

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