COURSE DETAIL

MATHEMATICS & PROGRAMMING
Country Netherlands
Host Institution Utrecht University
Program(s) Utrecht University
UCEAP Course Level Lower Division
UCEAP Subject Area(s) Mathematics Computer Science
UCEAP Course Number 10
UCEAP Course Suffix
UCEAP Official Title MATHEMATICS & PROGRAMMING
UCEAP Transcript Title MATH & PROGRAMMING
UCEAP Quarter Units 6.00
UCEAP Semester Units 4.00

Course Description

This course introduces mathematical and programming skills that are employed by researchers in the Molecular and Biophysical Life Sciences to analyze and integrate data and to understand the physics of living systems. The course is divided into two parts that run in parallel. The mathematics part of the course consists of nine lectures that cover: basic algebra, goniometry, differentiation and integration (including functions of multiple variables), limits, (partial) differential equations (first order and second order), Taylor expansion, basic probability theory and statistics and vectors (including dot product and cross product). Each lecture is followed by a supervised practical session. The programming part consists of six lectures that introduce the basics of programming by discussing the modulare structure of programs (modules, functions, loops), different data types and variables, as well as good practices. For some calculations of the mathematics part of the course it is explained how to perform those calculations using Python. After each lecture, students work individually on a series of practical coding assignments that familiarize them with the basics of programming in Python during supervised tutorials, where regular instruction and feedback is provided.

Language(s) of Instruction
English

Host Institution Course Number
MBLS-102

Host Institution Course Title
MATHEMATICS & PROGRAMMING

Host Institution Course Details
https://cursusplanner.uu.nl/Curriculum

Host Institution Campus
Utrecht University

Host Institution Faculty

Science

Host Institution Degree

Host Institution Department

Course Last Reviewed
2024-2025

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