Course: Data Analysis & Data Visualisation — credits: 5

Course code	BOVH25RDATAVISUA
Name	Data Analysis & Data Visualisation
Study year	2025-2026
ECTS credits	5
Language	English
Coordinator	J. Hageman
Modes of delivery	Tutorial
Assessments	Data Analysis using R - Other assessment Introduction data & Data Analysis using Excel - Other assessment

Learning outcomes

- You can explain the fundamental concepts of data, including data types, data structures, and the importance of data quality, and you can apply these concepts in the context of both Excel and R.
- You can import data from various sources (such as CSV, TXT, Excel files) into both Excel and R, and you are able to select the appropriate methods and functions for different data formats and structures. You can clean and prepare data for analysis in both Excel and R by applying techniques for identifying and handling missing values, outliers, inconsistencies, and duplicates.
- You can apply and interpret various data analysis functions in both Excel and R, including determining minimum and maximum values, calculating percentiles, selecting specific data based on criteria, applying conditional formatting to visually identify patterns, and sorting data to gain insights.
- You can create effective data visualizations in both Excel and R (such as bar charts, line charts, pie charts, and box plots) to communicate patterns, trends, and relationships in data, and you can customize the visualizations for a clear and purpose-driven presentation.

Content

Health and biological sciences are transforming due to vast data from sources like genomics, proteomics pharmacological data and clinical trials. Researchers use data analysis and visualization to gain insights. Analysis involves processing data to find patterns. Visualization transforms data into charts, aiding understanding, pattern identification, and communication. These tools are crucial for unlocking health data's potential.
This module teaches data analysis and visualization using Excel and R (Tidyverse). You'll learn to analyze and visualize different data types for reports. R is a key programming language in this field. Assignments will be completed with Excel and R. The module concludes with an independent portfolio assignment.

Included in programme(s)

Major Biology and Medical Research

School(s)

Institute for Life Science & Technology

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