Course: Human Genetics & Cell Biology — credits: 5

Course code	BOVH25RHUMANGENS
Name	Human Genetics & Cell Biology
Study year	2025-2026
ECTS credits	5
Language	English
Coordinator	O.Y. Wouters

Modes of delivery	Lecture Teaching method 1 Tutorial
Assessments	Human Genetics & Cell Biology - Computer, organised by STAD examinations Scientific literature - Other assessment

Learning outcomes

- You can name different DNA mutation and repair mechanisms and understand their contribution to the development of diseases such as cancer.
- You can describe how cells replicate, how the cell cycle works, and know which proteins are involved, and you can explain the role of specific proteins in the different phases of the cell cycle.
- You can describe how communication takes place at different levels between eukaryotic cells and within cells in a multicellular organism, and you can name how to intervene in this, for example for the treatment of cancer.
- You can describe the molecular mechanisms that underlie the development of neurodegenerative protein folding diseases such as Alzheimer's, Parkinson's, and Huntington's disease.
- You are able to read, understand, summarize, and present the main points of scientific literature on cell biology and genetics to fellow students.

Content

This module delves into the fundamental processes of life at the cellular and molecular level. Students explore the complexity of DNA mutations and repair mechanisms, and how these contribute to the development of diseases such as cancer. The module covers the cell cycle and cell replication in detail, highlighting the role of essential proteins. Additionally, it addresses communication between and within cells in multicellular organisms, and how these processes can be influenced for therapeutic purposes, particularly in the context of cancer treatment. The molecular mechanisms behind neurodegenerative protein folding diseases such as Alzheimer's, Parkinson's, and Huntington's disease are also covered. Students learn to critically analyze, summarize, and present scientific literature in a flip-the-classroom setting.

Included in programme(s)

Major Biology and Medical Research

School(s)

Institute for Life Science & Technology

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