UCLouvain

wsbim2114

2025

Analysis of gene expression and function

The version you're consulting is not final. This course description may change. The final version will be published on 1st June.

4.00 credits	39.0 h	Q1

Teacher(s)	Demoulin Jean Baptiste ;Lemaigre Frédéric (coordinator) ;Limaye Nisha ;Michiels Thomas ;Tyteca Donatienne ;
Language :	English
Place of the course	Bruxelles Woluwe
Main themes	The main topics are those of the analysis of the interaction between DNA and proteins, the study of gene expression, including manipulation of the expression level, cell imaging, receptor function, and electrophysiology. The integrated use of the tools presented will be further illustrated by recent scientific publications.
Learning outcomes	**At the end of this learning unit, the student is able to :** 1 At the end of this course, students will be able to use the tools needed to study the function of genes and their expression. Students will also be able to use the tools needed to investigate the subcellular localization and function of the proteins encoded by these genes.
Evaluation methods	Written examination on theoretical issues, data analysis, and methodological choices based on issues raised. The final mark of the exam results from the global evaluation of the exam, not from the mathematical sum of points collected at individual questions.
Teaching methods	Lectures
Content	Protein-DNA interactions and gene regulatory networks Ectopic gene expression, gene expression inhibition, introduction of nucleic acids in cells Bulk and single cell RNA sequencing Next generation sequencing and spatial transcriptomics Biological and fluorescence imaging Functional analysis of gene expression
Inline resources	Illustrations and text posted on Moodle.
Other infos	Courses grouped into periods of two hours during the first trimester. Courses are given in english.
Faculty or entity in charge	SBIM

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Biomedicine	SBIM2M	4		🔍
Master [60] in Biomedicine	SBIM2M1	4		🔍