

Transcriptomics

Course Workload		Assessment form (examination/ graded test/ ungraded test)
ECTS	Hours	
3	108	Ungraded test

This course provides a comprehensive overview of transcriptomics. Students will learn about RNA sequencing technologies, data analysis, and the biological implications of gene expression.

Course structure:

1. RNA sequencing (differential expression analysis and enrichment analysis)

- 1.1. Sequencing to analyze gene expression
- 1.2. Read mapping and quantification
- 1.3. Normalization
- 1.4. Experimental designs
- 1.5. Enrichment analysis

2. Single-cell RNA Sequencing

- 2.1. Challenges
- 2.2. scRNAseq experiment overview

3. Spatial RNAseq

- 3.1. Key Steps in Spatial RNA-seq

4. Transcriptome assembly

- 4.1. Steps of transcriptome assembly
- 4.2. Key tools and instruments