

“Principles of genome analysis and comparative bacterial genomics. “

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Knowledge acquired: Basic and advanced knowledge on structural, comparative and functional genomics. Knowledge on methodologies for genome analysis

Competence acquired: The student has acquired competence on the study of genomes and on the experimental and bioinformatic techniques for their investigation

Skills acquired (at the end of the course): The student is able to autonomously set up an experimental and bioinformatic protocol for genome analysis and see the outcomes in both biological and biotechnological terms.

Topics covered:

Introduction to genomics.

The history of genome sequencing.

Techniques for sequencing and mapping.

Gene evolution and gene families.

Evolution of genome architecture.

Comparative genomics.

Principles of functional genomics.

Study of genome-wide expression.

The concept of gene and functional genomics.

Control of gene expression at the whole genome level.

Comparative transcriptomics.

Genome variability: identification, origin and methodologies.

Population genomics.

Statistical analysis of genome variability.

Environmental genomics: discoveries and applications.

Bioinformatic tools for the study of structure and function of genomes

Period: 7-14 January, 5h/day

7.01.2015 : 13.30 – 18.15 (s. Tylora)

8.01.2015 : 12 – 16.45 (s. Tylora)

9.01.2015 : 12 – 16.45 (s. 23)

12.01.2015 : 14.15 – 19 (s. 23)

13.01.2015 : 15 – 19.45 (s. 23)

14.01.2015 : 13.30 – 18.15 (s. Tylora)