Vak: Bioinformatics

credits: 5

Vakcode	BFVH24BIOINFORM
Naam	Bioinformatics
Studiejaar	2026-2027
ECTS credits	5
Taal	Engels
Coördinator	L. Oldhoff
Werkvormen	Hoorcollege Werkcollege
Toetsen	Bioinformatics Portfolio - Overige toetsing Bioinformatics Theory - Schriftelijk, eigen organisatie

Leeruitkomsten

1. You are able to construct phylogenetic trees from suitable data and can interpret the tree's contents, applying evolutionary knowledge.
1. You know the state-of-the art sequencing techniques and you can describe the advantages and disadvantages of the different techniques.
1. You know the different sequence alignment algorithms, their basic properties and applications. You know how to use and optimize the tools that employ these algorithms.
1. You are able to navigate the currently available online databases of bioinformatics information and data and can interpret and work with the filetypes commonly found there.
1. You independently carry out research into scientific literature and concisely present your results in a poster.

Inhoud

This course is an introduction to the knowledge and techniques that form the core of the field of bioinformatics. This includes important algorithms used in the field to handle DNA and protein sequence data, such as the Waterman-Smith and Needleman-Wunch algorithms, substitution Matrices such as PAM and BLOSUM, and all types of BLAST. Biological concepts such as homology are also looked at, in the context of phylogenetic trees. And, lastly, we will look at the data itself. From how it is acquired through different kinds of sequencing technologies to how it is stored, shared and accessed. Basic knowledge of biology and the central dogma is required to follow this course.

Opgenomen in opleiding(en)

Minor Data Science for the Life Sciences

School(s)

Engineering, Life Sciences & ICT

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De ECTS onderwijscatalogus van de Hanzehogeschool Groningen wordt met de grootst mogelijke zorg samengesteld. Het is echter mogelijk dat de inhoud van de catalogus -en de daarin vervatte informatie- verouderd, incompleet of onjuist is. Aan de inhoud van de catalogus kunnen dan ook geen rechten worden ontleend.