
Bioinformatics for Life Scientists

BIOINF1910 (3 ECTS credits)

Overview

The course provides an introduction to bioinformatics, sequence analysis and structure-based bioinformatics. The theoretical concepts covered by the lecture will be exercised and tested through weekly electronic assignments via ILIAS. The topics include an introduction to the UNIX operation system, programming in Python, pairwise and multiple sequence alignments, sequence databases and database searches (BLAST), phylogeny, systems biology, next-generation sequencing, protein structure visualization in PyMOL, prediction of secondary structures, threading and homology modeling, and ab-initio structure prediction.

Goals

- Key concepts of computational biology and bioinformatics
- Basics of computer science and programming
- Application of tools to problems from sequence alignment and structural bioinformatics

Requirements

- Join BIOINF1910 on ILIAS (Password: BILS\$2017)
- Passing the online assignments
- Passing the written exam

Evaluation

Passing requires a grade of 4.0 or better for both the online assignments and the written exam. Assignments will have to be worked on individually!

The overall grade is computed as the weighted average of:

- Grade of the online assignments (40% of overall grade)
- Grade of the final (written) exam (60% of the overall grade)

Summer 2017

21.04 - 28.07: Fri 8-10, N3

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Office Hours: by appointment

Materials

Slides will be handed out at the beginning of each lecture. Materials will be made available at the ILIAS course page: (Course BIOINF1910) <https://ovidius.uni-tuebingen.de/ilias3>

Recommended textbook:

Zvelebil, Baum: understanding bioinformatics, Taylor&Francis Ltd., 2006

Assignments

Computer pools at IFIB (room 425C) will be available Tue 12:00 – 16:00 and Fri 13:00 – 17:00.

Key Dates

April 21

Introduction/First Lecture

April 28

Due date first online assignment (23:59 CEST).

July 28

Written exam 8-10, N3
