DD2396 Bioinformatics 6.0 credits

Bioinformatik

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for DD2396 valid from Autumn 2009

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Specific prerequisites

3A1501/BB1010 Introduction to biotechnology and 3A1512/BB1020 Cellbiology and basic computer knowledge equivalent to 2D1311/DD1311 Programming Technique or 2D1212/DD1212 Numerical Methods and Basic Programming.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

This course aims to give an introduction to the field of Bioinformatics and the tools it provides for researchers today. This includes an understanding of basic theory in the area and skills in using commonly used software tools. An overview of the future direction of Bioinformatics is also offered through examples from the scientific frontline.

Course contents

After completing this course, you will be able to

- use the most important public databases for literature, sequence information and structure information.
- perform sequence comparisons and give justified interpretations of the results.
- choose between evolutionary models in a rational way.
- reconstruct the evolutionary history of a sequence family as well as data allows.
- provide important structural information about genes, proteins, and genomes.
- interpret and make use of gene expression data.
- establish the statistical significance of bioinformatic results.
- discuss opportunities and limitations with bioinformatic tools
- plan for new bioinformatic problems and solve these by combining the tools you learn about in this course.

Course literature

Subject to change, but we have recently used Baxevanis och Oullette, Bioinformatics: A practical guide to the analysis of genes and proteins. It will be announced at the course home page at least 4 weeks before course start.

Examination

- TENA - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- LABA - Laboratory Work, 1.5 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

In this course all the regulations of the code of honor at the School of Computer science and Communication apply, see: http://www.kth.se/csc/student/hederskodex/1.17237?l=en_UK.

Other requirements for final grade

One exam (TENA; 4,5 university credits).
Laboratory assign (LABA; 1,5 university credits).

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.