Bioinformatics

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Bioinformatics - what is it?

- The term bioinformatics is used to encompass almost all computer applications in biological sciences.

- Information technology applied to the management and analysis of biological data

- originally - analysis of sequence data (1980s)

- presently - also analysis of 3D-structures

Bioinformatics - study material

- Introduction to bioinformatics, T.K. Attwood and D.J. Parry-Smith, Longman, Essex, 1999.

- http://www.awl-he.com/biology

- http://www.bioinf.man.ac.uk/dbbrowser/bioactivity/prefacefrm.html

- http://www.chemi.muni.cz/~jiri

Bioinformatics - arrangement

2 hours per week (12?? lectures in total)

- 1st hour = lectures - theory
- 2nd hour = training on computers - examples

Bioinformatics - lectures

- Introduction
- Information networks
- Protein information resources
- Genome information resources
- DNA sequence analysis
- Pairwise sequence alignment
- Multiple sequence alignment
- Secondary database searching
- Analysis packages
- Protein structure modelling

Bioinformatics - practical training

- Databases
- Searching and modelling servers
- Building a sequence search protocol
- Case examples (sequences)
- Protein structure prediction
- Protein modelling

- Follow-up of lectures

Bioinformatics - examination

- Written test: 100 questions (1 point / question)

100-90 points = 1
89-80 points = 2
79-60 points = 3

- Oral examination: example sequence ->
search, analysis, modelling, prediction
(in Czech or in English)