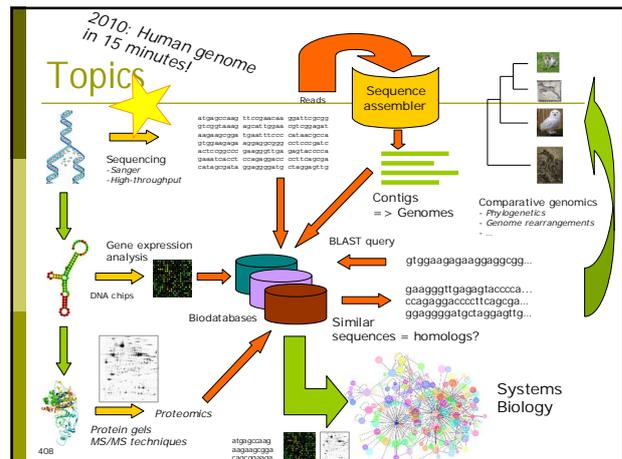


# Introduction to Bioinformatics

Wrap-up



## Exams

- ρ Course exam Wednesday 15 October 16.00-19.00 Exactum A111
- ρ Separate exams
  - η Tue 18 November 16.00-20.00 Exactum A111
  - η Fri 16 January 16.00-20.00 Exactum A111
  - η Tue 31 March 16.00-20.00 Exactum A111
- ρ Check exam date and place before taking the exam! (previous week or so)

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## Exam regulations

- ρ If you are late more than 30 min, you cannot take the exam
- ρ You are not allowed to bring material such as books or lecture notes to the exam
- ρ Allowed stuff: blank paper (distributed in the exam), pencils, pens, erasers, calculators, snacks
- ρ Bring your student card or other id!

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## Grading

- ρ Grading: on the scale 0-5
  - η To get the lowest passing grade 1, you need to get at least 30 points out of 60 maximum
- ρ Course exam gives you maximum of 48 points
- ρ Note: if you take the first separate exam, the best of the following options will be considered:
  - η Exam gives you max 48 points, exercises max 12 points
  - η Exam gives you max 60 points
- ρ In second and subsequent separate exams, only the 60 point option is in use

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## Exercise points

- ρ Max. marks: 31
- ρ 80% of 31  $\approx$  24 marks -> 12 points
- ρ 2 marks = 1 point

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## Topics covered by exams

- ρ Exams cover everything presented in lectures (exception: biological background not covered)
- ρ Word distributions and occurrences (course book chapters 2-3)
- ρ Genome rearrangements (chapter 5)
- ρ Sequence alignment (chapter 6)
- ρ Rapid alignment methods: FASTA and BLAST (chapter 7)
- ρ Sequencing and sequence assembly (chapter 8)

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## Topics covered by exams

- ρ Similarity, distance and clustering (chapter 10)
- ρ Expression data analysis (chapter 11)
- ρ Phylogenetic trees (chapter 12)
- ρ Systems biology: modelling biological networks (no chapter in course book)

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## Bioinformatics courses in 2008

- ρ Biological sequence analysis (II period, Kumpula)
  - η Focus on probabilistic methods: Hidden Markov Models, Profile HMMs, finding regulatory elements, ...
- ρ Modeling of biological networks (20-24.10., TKK)
  - η Biochemical network modelling and parameter estimation in biochemical networks using mechanistic differential equation models.

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## Bioinformatics courses in autumn 2008

- ρ Bayesian paradigm in genetic bioinformatics (II period, Kumpula)
  - η Applications of Bayesian approach in computer programs and data analysis of
    - ρ genetic past,
    - ρ phylogenetics,
    - ρ coalescence,
    - ρ relatedness,
    - ρ haplotype structure,
    - ρ disease gene associations.

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## Bioinformatics courses in autumn 2008

- ρ Statistical methods in genetics (II period, Kumpula)
  - η Introduction to statistical methods in gene mapping and genetic epidemiology.
  - η Basic concepts of linkage and association analysis as well as some concepts of population genetics will be covered.

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## Bioinformatics courses in Spring 2009

- ρ Practical Course in Biodatabases (III period, Kumpula)
- ρ High-throughput bioinformatics (III-IV periods, TKK)
- ρ Phylogenetic data analyses (IV period, Kumpula)
  - η Maximum likelihood methods, Bayesian methods, program packages
- ρ Metabolic modelling (IV period, Kumpula)

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## Bioinformatics conferences

- ISMB, Intelligent Systems for Molecular Biology (Toronto, July 2008)
- ICSB, International Conference on Systems Biology (Göteborg, Sweden; 22-28 August)
- RECOMB, Research in Computational Molecular Biology
- ECCB, European Conference on Computational Biology
- WABI, Workshop on Algorithms in Bioinformatics
- PSB, Pacific Symposium on Biocomputing

January 5-9, 2009  
The Big Island of Hawaii



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## Master's degree in bioinformatics?

- You can apply to MBI during the application period November '08 – 2 February '09
  - Bachelor's degree in suitable field
  - At least 60 ECTS credits in CS or mathstat
  - English language certificate
- Passing this course gives you the first 4 credits for Bioinformatics MSc!



MBI MASTER'S DEGREE  
PROGRAMME IN BIOINFORMATICS



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## Information session on MBI

- Wednesday 19.11. 13.00-15.00 Exactum D122
- [www.cs.helsinki.fi/mbi/events/info08](http://www.cs.helsinki.fi/mbi/events/info08)
- Talks in Finnish

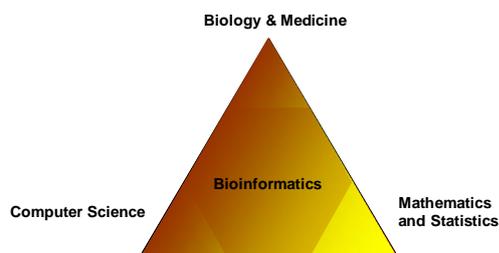
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## Mailing list for bioinformatics courses and events

- MBI maintains a mailing list for announcement on bioinformatics courses and events
- Send email to [bioinfo@cs.helsinki.fi](mailto:bioinfo@cs.helsinki.fi) if you want to subscribe to the list (you can unsubscribe in the same way)
- List is moderated

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## The aim of this course



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## Feedback

- Please give feedback on the course!
  - <https://ilmo.cs.helsinki.fi/kurssit/servlet/Valinta?kieli=en>
- Don't worry about your grade – you can give feedback anonymously

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Thank you!

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p I hope you enjoyed the course!



*Halichoerus grypus*, Gray seal or *harmaahylje* in Finnish

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[taivasalla.net](http://taivasalla.net)

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