Advanced Algorithmics (6EAP)
http://courses.cs.ut.ee/2012/algorithmics/
MTAT.03.238
Organisation of course

Jaak Vilo
2013 Spring
Lecturer

- 1986-1991 U Tartu (diploma)
- 1991-1999 U Helsinki (sequence pattern discovery, PhD)
- 1999-2002 EMBL-EBI, UK (bioinformatics)
- 2002- EGeeen -> Quretec   (Biobank and Data Mgmnt)
- U Tartu, professor (Bioinformatics) 2007
  - EXCS – Center of Excellence
  - STACC – Software Technologies and Applications Competence Center (Tarkvara TAK)
  - research projects
Short CV

EMBL-EBI

Estonian Biocentre
Eesti Biocentre, Riia 23b Tartu 51010 Estonia

Estonian Genome Center
University of Tartu

QureTEC

BIIIT

STACC
Software Technology and Applications Competence Center
Goals

• To learn the main concepts and techniques of the *algorithm design and analysis* – the *practical skills* and *theoretical basis*

• To be able to choose, design, analyze and compare algorithms and data structures

• To learn to learn, use knowledge, solve, read, write, and present
Contact hours

• Lectures: Jaak Vilo
  – Wed. 10-12 (404)
  – Thu. 12-14 (404)
  – In total about 22-25 lectures (not 32)

• Weekly practical sessions (homework):
  – Wed 12-14 Ilja Kuzovkin (404)
  – Thu 16-18 Oleg Šelajev (404)
Contacts:

• Jaak Vilo – prof. of bioinformatics  vilo@ut.ee
• Ilja Kuzovkin -  ilja.kuzovkin@gmail.com
• Oleg Šelajev - shelajev@gmail.com
• ati.algorithmics@lists.ut.ee
• http://courses.cs.ut.ee/2013/algorithmics/
• JV: room 327
  – Come by (knock on door) or when door open
• Upon agreement
Course and Grade

- Lectures
- Homework 30 + bonus points
- Project work 20
- Essay 10
- Exam 40

------------------------------------------------------
- Total 100p
Homework

• **Most essential part** of the course
• **First 20 – no points.** Thereafter:
  • 1 task = 1 point
• **50 HW tasks completed -> 50-20 = 30 points**
• **12-14 weeks of homeworks** (12w*5=60)
• Obligatory to get a **minimum of 50% done**
  – 30 tasks - 20 = 10 points (out of 30 max)
• **Presentations orally** during the practicals
Essay

• Will be based on some article

• To be decided during the course

• Reading and writing skills

• A format of the scientific article (abstract, citations, etc)
Project

• A practical algorithm implementation plus analysis and comparisons of efficiency

• Presentation in form of a project report in scientific style (poster, report, ...
Exam

• Will be based on questions similar to the homework assignments

• Knowledge of the basic principles of algorithms

• Creative use of the algorithms
# 6EAP vs expected hours

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
<th>Expected Hours</th>
<th>Total Hours</th>
</tr>
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<tbody>
<tr>
<td>Lectures</td>
<td>24</td>
<td>1.5</td>
<td>36</td>
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<tr>
<td>Practice sessions</td>
<td>12</td>
<td>1.5</td>
<td>18</td>
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<tr>
<td>Homeworks</td>
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<td>Project</td>
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<tr>
<td><strong>Total</strong></td>
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</tbody>
</table>

| EAP                     | 6     | 26             | 156         |
• Dedlines – strict

• Plagiarism – not tolerated
Contact

• Lectures, practicals – active hours


• Email (vilo @ ut.ee)
Questionnaire

• To assess the basic starting point and expectations before the course start

• Please fill in the form to the best of your ability as is during the next 15-20 minutes.