Advanced Algorithmics (6EAP)  
MTAT.03.238

https://courses.cs.ut.ee/2017/algorithms/fall

Organisation of course

Jaak Vilo

2017 Fall
Lecturer

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

EMBL-EBI

EGeen

estonian genome center
university of tartu

Estonian Biocentre
Eesti Biocentru Riia 23b Tartu 51010 Estonia

QureTEC

BIZIT

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, implement, design, analyze and compare algorithms and data structures

• To **learn to learn**, use knowledge, program quickly, solve tasks, read, write, and present
Contact hours

• Lectures: Jaak Vilo
  – Tue 10-12 (403)
  – Thu 10-12 (403)
  – In total about 23-25 lectures (not 32)

• Weekly practical sessions (homework):
  – group 1. Tue 12-14  L 403 (Mari-Liis Allikivi)
  – group 2. Thu 12-14  L 403 (Mari-Liis Allikivi)
  – group 3. Fri 12-14  L 403 (Dmytro Fishman)
Contacts:

- Jaak Vilo  vilo ät ut.ee
- Mari-Liis Allikivi  ml.allikivi ät gmail.com
- Dmytro Fishman  dmytro.fishman ät ut.ee
- ati.algorithmics@lists.ut.ee  (lists.ut.ee )
- https://courses.cs.ut.ee/2017/algorithmics/fall
- Office – Liivi 2 - 215 and 311
Course Grade

• Lectures
• Homework 30 + bonus points 0-30
• Project 20
• Essay 10
• Exam 40

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• Total 100p

All components obligatory
Homework (obligatory)

• Most essential part of the course
• 12 weeks of homeworks (12w*5=60)
• First 20 – “no points”.
• Thereafter: 1 task = 1 point
• E.g. 50 HW tasks completed -> 50-20 = 30 points
• Presentations orally during the practicals
• Submissions over the web,
• deadline – Every Monday 23:59
• Obligatory to get **a minimum of 50% done**
  – 30 tasks - 20 = 10 points (out of 30 max)

• Obligatory presence at the practice sessions
  – 70% (8 out of 12 weeks)
  – Every missed (out of 8) – subtract 5 points
    • 6 times present – deduct 10 points from already earned practice session points
Essay (obligatory)

• 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 (obligatory)

• A practical algorithm implementation plus analysis and comparisons of efficiency

• Presentation in the form of a project report in scientific style (poster, report, ...
Exam (obligatory, minimum 50%)

- Will be based on questions similar to the homework assignments

- Knowledge of the basic principles of algorithms; broad understanding of the course materials.
# 6EAP vs expected hours

<table>
<thead>
<tr>
<th>Activity</th>
<th>Hours</th>
<th>Expected Hours (3h/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>22</td>
<td>1.5</td>
</tr>
<tr>
<td>Practice sessions</td>
<td>12</td>
<td>1.5</td>
</tr>
<tr>
<td>Homeworks</td>
<td>60</td>
<td>0.6</td>
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<tr>
<td>Essay</td>
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<tr>
<td>Project</td>
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<tr>
<td>Exam preparation</td>
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<td>Exam</td>
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<td><strong>Total</strong></td>
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| EAP                         | 6     | 26                     | 156 |
• All deadlines – strict

• Plagiarism – not tolerated (will lead to exmatriculation quickly)
  – Any material used should be referenced & cited properly
  – Develop your solutions, your opinions, etc.
  – Study group work should be finalised privately
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.