Algorithmics (6EAP)
MTAT.03.238

Organisation of course

Jaak Vilo

2021 Fall
cs.ut.ee
courses.cs.ut.ee
Delta center & Online

2021 Fall
Jaak Vilo
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
  - Head of #UniTartuCS (from 2011)
Short CV

EMBL-EBI

Estonian Biocentre
Eesti Biocentre All 23 Tartu 81010 Estonia

QureTEC

BIKIT

Software Technology and Applications Competence Center
STACC
Goals

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

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

• Learn to learn, use knowledge, solve tasks, program efficiently, read, write, and present

• Equalizing backgrounds for students from different degree programmes etc. (Leveling course)
Contact hours

• Lectures: Jaak Vilo on Panopto (from 2020)
  – Tue 10-12 (Delta 1021; mostly Online; consulting)

• Weekly practical sessions (homework):
  G1. Tuesday 12.15 - 14.00 Delta - 2048 (Kallol Roy)
  G2. Thursday 14.15 - 16.00 Delta - 2010 (Joonas Puura)
  G3. Friday 14.15 - 16.00 (Kallol Roy, online only)
Contacts:

• Jaak Vilo  vilo ‘ät’ ut.ee
• Joonas Puura  joonas.puura ‘ät’ ut.ee
• Kallol Roy  kallol.roy ‘ät’ ut.ee

• Slack:  
  https://join.slack.com/t/unitartucretsalg-feb1051/shared_invite/zt-v1g8qb2b-HmNRNgHyKJs06D8WSD5GEA

• ati.algorithmics@lists.ut.ee (lists.ut.ee)  
  – Self-service
Practical work and grading

- Homework
- Essay
  - Initial submission
  - Peer review
  - Final submission
- Project
  - Implementation
  - Presentation
- Exam
Course Grade

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

All components obligatory

- Total 100p
Homework (obligatory)

Most essential part of the course

• **12 weeks of homeworks** \((12w*5=60\text{ tasks})\)
• Points: nr of tasks – 20 (e.g. 40hw -> 20 p)
• **Presentations orally** during the practicals
• Submissions over the web,
• **deadline** – Every Monday 23:59
50% minimum threshold

• 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 3 points
    • E.g. **6 times present** – deduct 6 points from already earned practice session points
“Essay” (obligatory)

• Will be based on some article – 2 page summary

• To be decided during the course

• Reading and writing skills, peer review

• 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 (EAP)</th>
<th>Hours (Expected)</th>
<th>Total (3h/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>22</td>
<td>1.5</td>
<td>33</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>Essay</td>
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<td>Project</td>
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<td>Exam preparation</td>
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<td>Exam</td>
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<td><strong>Total</strong></td>
<td><strong>6</strong></td>
<td><strong>26</strong></td>
<td><strong>155</strong></td>
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EAP

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<td>156</td>
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</tbody>
</table>
• 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 (tbd)

• 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.

• [https://courses.cs.ut.ee/2021/Algorithmics/fall/Main/Lectures](https://courses.cs.ut.ee/2021/Algorithmics/fall/Main/Lectures)