Advanced Algorithmics (6EAP)
MTAT.03.238


Organisation of course

Jaak Vilo

2018 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
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 (L2 - 403)
  – Thu 10-12 (L2 - 403)
  – In total about 23-25 lectures (not 32)

• **Weekly practical sessions (homework):**
  – G1. Tue 12.15 - 14.00 L2 -403 (Dmytro Fishman)
  – G2. Thu 12.15 - 14.00 L2 - 403 (Dmytro Fishman)
  – G3. Fri 12.15 - 14.00 L2 - 403 (Novin Shahroudi)
Contacts:

• Jaak Vilo  vilo ‘ät’ ut.ee
• Dmytro Fishman dmytro.fishman ‘ät’ ut.ee
• Novin Shahroudi novin ‘ät’ ut.ee

• ati.algorithms@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

All components obligatory

- Total 100p
Homework (obligatory)

• **Most essential part** of the course
• **12 weeks of homeworks** \((12w \times 5 = 60)\)
• First 20 – “no points”.
• Thereafter: 1 task = 1 point
• E.g. 50 HW tasks completed \(\rightarrow 50-20 = 30\) 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
    • E.g. **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

| Activity                  | Hours | EAP | Expected
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<tbody>
<tr>
<td>Lectures</td>
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<td>1.5</td>
<td>33</td>
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<tr>
<td>Practice sessions</td>
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<td>1.5</td>
<td>18</td>
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<td>Exam preparation</td>
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<td><strong>Total</strong></td>
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EAP: 6 (3h/w)
• 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.