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 Mgmt)
• U Tartu, professor (Bioinformatics) 2007
  – STACC – Software Technologies and Applications Competence Center (Tarkvara TAK)
  – research projects

Short CV
EMBL-EBI

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
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• Dmytro Fishman
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• Novin Shahroudi
  novin ‘at’ 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 All components obligatory
• Exam 40

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• Total 100p

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

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, ...)

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
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

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<thead>
<tr>
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<th>Hours</th>
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<tbody>
<tr>
<td>Lectures</td>
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<tr>
<td>Practice sessions</td>
<td>12</td>
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<tr>
<td>Homeworks</td>
<td>60</td>
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<tr>
<td>Essay</td>
<td>16</td>
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<tr>
<td>Project</td>
<td>40</td>
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<tr>
<td>Exam preparation</td>
<td>8</td>
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<td>Exam</td>
<td>4</td>
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<td><strong>Total</strong></td>
<td><strong>155</strong></td>
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<td>EAP</td>
<td>6</td>
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<td>26</td>
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<td><strong>Total (3h/w)</strong></td>
<td><strong>156</strong></td>
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Questionnaire

- 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
- 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.