LTAT.05.021

Introduction to Blockchain Technology

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University of Tartu
On successful completion of this course, students will able to

- Explain the essential and fundamental characteristics of blockchain technology
- Bitcoin and other cryptocurrencies
- Select appropriate technical options for blockchain-based application design and implementation
- Examine existing blockchain-based use cases in industries such as finance, public services, supply chains etc
- Identification and analysis of blockchain-based applications security risks and controls to mitigate them
About the Course

• Course Website
  – https://courses.cs.ut.ee/2022/BCT/fall

• Lectures
  • Presented during lectures - uploaded to before the lecture

• Reading
  • Self-study material
  • Selected books and articles

• Submit
  • Place where you will be able to upload workshops solutions
# Course Outline

<table>
<thead>
<tr>
<th></th>
<th>Date</th>
<th>Topic</th>
<th>Activity</th>
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<tbody>
<tr>
<td>1</td>
<td>1 September</td>
<td>Blockchain and Cryptocurrency</td>
<td>Workshop 1</td>
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<td>3</td>
<td>15 September</td>
<td>Blockchain Use Cases</td>
<td>Workshop 2</td>
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<td>Blockchain-based System Design</td>
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<td>5</td>
<td>29 September</td>
<td><strong>Guest lecture (Dr. Madhusudan Singh)</strong></td>
<td>Test 1</td>
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<td>7</td>
<td>13 October</td>
<td>Hyperledger Fabric (HLF) and Chaincode Ethereum and Smart contract</td>
<td>Workshop 3</td>
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<td>9</td>
<td>27 October</td>
<td>Security Design for Distributed Information Systems</td>
<td>Workshop 4</td>
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<td>Cryptographic Methods in Blockchains</td>
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<td>11</td>
<td>10 November</td>
<td>Blockchain Components and Security Method</td>
<td>Test 2</td>
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<td>Blockchain Patterns</td>
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<td>13</td>
<td>24 November</td>
<td>Security Risk Analysis of Blockchain-based Applications</td>
<td><strong>Guest lecture (Dr. Madhusudan Singh)</strong></td>
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<td>15</td>
<td>08 December</td>
<td>Model-driven Engineering, Cost, and Performance Analysis of Blockchain-based Applications</td>
<td>Workshop 5</td>
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*Changes are possible!*
Workload

3 ECTS = 78 hours of study
(1 ECTS = 26 hours of study)

• Lectures – 32 hours
• Independent work – 46 hours
  – Self-study
  – Preparation for presentation and two tests
  – Perform workshop assignments
Modalities and Assessment

- 2 Tests – 20 points
- 5 Workshops – 50 points
- Final Report – 10 points
- Exam – 10 points
- Class Discussion – 10 points (+5 bonus)
Modalities and Assessment

- **2 Tests** – 20 points
- **5 Workshops** – 50 points
- **Final Report** – 10 points
- **Exam** – 10 points
- **Class Discussion** – 10 points (+5 bonus)

To pass the course, you need at least **51 points** collectively. You should acquire at least **50% points** from each above mentioned assessment item.
Introduction to Blockchain Technology: **Practical Assignment**

- Another **Blockchain** course
- **Fully online**
- Task based
- Set your own schedule
- 10 minutes progress check
- Work on your **Thesis**

*(for registration contact me at mubashar.iqbal@ut.ee)*
Any Questions