

STUDY GUIDE

BLOCKCHAIN IN SUPPLY CHAIN AND LOGISTICS MANAGEMENT

Organised by

University of Vaasa (UVA)



1. IDENTIFYING DATA.

· Course Name.	<i>Blockchain in Supply Chain and Logistics Management</i>
· Coordinating University.	<i>University of Vaasa</i>
· Partner Universities Involved.	-
· Course Field(s).	<i>Industrial Management</i>
· Related Study Programme.	<i>Industrial Systems Analytics, Master of Science Industrial Management, Master of Science</i>
· ISCED Code.	<i>0718</i>
· SDG.	<i>SDG 4: Quality Education SDG 9: Industry, Innovation and Infrastructure SDG 11: Sustainable Cities and Communities SDG 12: Responsible Consumption and Production</i>
· Study Level.	<i>Master</i>

· Number of ECTS credits allocated.	<i>5</i>
· Mode of Delivery.	<i>Online self-study</i>
· Language of Instruction.	<i>English</i>
· Course Dates.	<i>1st of September 2023 – 15th of December 2023</i>
· Precise Schedule of the Lectures.	<i>Online Self-Study There is no fixed timetable but there will be 2-3 live sessions for introduction, questions, answers, and feedback. Dates will be announced in Moodle.</i>
· Key Words.	<i>Blockchain; Supply Chain; Logistics; Smart Contract; Networks; Traceability; Transparency; Security</i>
· Catchy Phrase.	<i>Develop an understanding of blockchain and why it is a good fit in the supply chain domain</i>

· Prerequisites and co-requisites.	<i>-English B2 -Master's students only -Seen as an advantage: knowledge of supply chain, logistics management, and blockchain</i>
· Number of EUNICE students that can attend the Course.	<i>18 (BTU, IPV, KAU, PUT, UC, UMONS, UNICT, UOP UPHF: 2 each. UVA: Check Peppi)</i>





· Course inscription procedure(s).	<i>Enrolment via the EUNICE website</i>
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2. CONTACT DETAILS.	
· Department.	<i>School of Technology and Innovations</i>
· Name of Lecturer.	<i>Ahm Shamsuzzoha; Khuram Shahzad</i>
· E-mail.	ahm.shamsuzzoha@uwasa.fi ; khuram.shahzad@uwasa.fi
· Other Lecturers.	<i>Essi Nousiainen</i>

3. COURSE CONTENT.
<p><i>Module 1: Fundamentals of blockchain; Introduction of blockchain; Blockchain core components; Hands on exercise to build a blockchain; Blockchain as a Service; Application of blockchain in different sectors</i></p> <p><i>Module 2: Smart contracts in SC&L; Introduction to digital contracts; Dimensions of smart contracts; Platforms for smart contract; Role of smart contracts in SC&L; Security challenges and measures</i></p> <p><i>Module 3: Supply chain and its challenges; Tracking and traceability; Transparency and security; Longer cycle times; Inefficiencies in inventory; Visibility of operations</i></p> <p><i>Module 4: Blockchain in supply chain and logistics; Verification of authenticity; Agreements and contracts; Blockchain regulations and Ethics; Impact of blockchain on supply chain transparency; Perspective of blockchain in logistics visibility</i></p> <p><i>Module 5: Benefits and challenges to blockchain in supply chain and logistics; Opportunities of blockchain in supply chain and logistics; Lower transaction costs; Cyber security in transactions processes; Transparency increasing efficiency, agility and innovation; Limitations of blockchain technology; Absence of universal data standards; Compliance and legal issues; Barriers to blockchain adoption – system integration and maturity issues (wait and see mentality)</i></p> <p><i>Module 6: Blockchain use cases in supply chain and logistics; Blockchain use cases in supply chain and logistics; Blockchain for sustainable supply chain models; Blockchain strategy for specific supply chain; The future of blockchain technology</i></p>

4. LEARNING OUTCOMES.
<p><i>After this course, students will be able to: Learn what blockchain technology is and how it works; Develop a solid basic understanding of several aspects of blockchain and smart contract; Identify</i></p>





the main challenges in today's SC&L domain and know why blockchain is a great fit along with its potential solutions.

5. OBJECTIVES.

Students understand the integration and impact of blockchain in SC&L domain; Explore real life use cases applicable to blockchain in SC&L domain; Recognize the opportunities and challenges of blockchain in SC&L domain; Explore future prospects and trends of blockchain in decentralized organizational structures, networks and applications.

6. COURSE ORGANISATION.

UNITS

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|----|--------------------------------------------------------------------------------------|
| 1. | <i>Module 1: Fundamentals of blockchain</i> |
| 2. | <i>Module 2: Smart contracts in SC&L</i> |
| 3. | <i>Module 3: Supply chain and its challenges</i> |
| 4. | <i>Module 4: Blockchain in supply chain and logistics</i> |
| 5. | <i>Module 5: Benefits and challenges to blockchain in supply chain and logistics</i> |
| 6. | <i>Module 6: Blockchain use cases in supply chain and logistics</i> |

LEARNING RESOURCES AND TOOLS.

Lecture slides, lecture videos, scientific articles (provided by the teacher), relevant videos (provided by the teacher)

PLANNED LEARNING ACTIVITIES AND TEACHING METHODS.

- Completely online course: 135 hours in total including (Lectures 20 h, independent work 115 h)
- Recorded video lectures
- Scientific articles
- Individual assignments and quizzes
- Introduction and feedback lectures (blended learning)

7. ASSESSMENT METHODS, CRITERIA AND PERIOD.

Grading: On a scale of 1-5, or fail (0)

OBSERVATIONS.

Course code at UVA: TUTA3300

Recognition-related issues:





Please contact your home university's International Relations Office if you encounter any issues concerning the recognition of the ECTS at the end of the course. Lecturers are not in charge of the recognition process.

8. BIBLIOGRAPHY AND TEACHING MATERIALS.

All materials will be provided by the teachers

