

## Traceability in the textile value chain Spårbarhet i textila försörjningskedjor

7.5 credits

7.5 högskolepoäng

---

**Ladok Code:** AE2TF2

**Version:** 1.0

**Established by:** Committee for Education in Business and Working Life 2023-03-01

**Valid from:** Autumn 2023

**Education Cycle:** Second cycle

**Main Field of Study (Progressive Specialisation):** Textile Management (A1F)

**Disciplinary Domain:** Social sciences

**Prerequisites:** Completed courses within the programme corresponding to 45 higher education credits. In addition, English B or English 6 or equivalent knowledge is required.

**Subject Area:** Leadership, Organisation and Management

**Grading Scale:** Seven-degree grading scale (A-F)

---

### Content

The course aims to give students basic understanding of traceability systems and tools to ensure business integrity and sustainability in the textile value chain. The course covers the basic aspects of traceability in the textile and clothing industry such as internal and external traceability, traceability schemes, and technologies for product labelling (e.g. QR codes and RFIDs). The course also introduces traceability systems, with a specific focus on certified traceability models for supply chain management.

### Learning Outcomes

After completing the course, the student will be able to:

#### *Knowledge and understanding*

- 1.1 explain the basic conditions for traceability in the supply chain,
- 1.2 describe labelling technologies used to create traceability in the supply chain,
- 1.3 describe and explain how information systems (blockchain) to keep track of traceability data work,
- 1.4 explain the differences between traceability models offered by existing sustainability certification systems,

#### *Skills and abilities*

- 2.1 apply knowledge of blockchain in the development of traceability in the supply chain,
- 2.2 identify the requirements for a traceability system for a specific application scenario,
- 2.3 compare different labelling techniques for traceability and data management strategies with regard to the advantages and disadvantages associated with the governance of the textile value chain,
- 2.4 compare traceability models with regard to their advantages and disadvantages in relation to supply chain management;

#### *Evaluation ability and approach*

- 3.1 with support in relevant theories and previous research, critically and independently discuss the properties and limitations of a traceability system,
- 3.2 with support in relevant theories and previous research, reflect on the role of traceability in SSCM (Sustainable Supply Chain Management),
- 3.3 with support in relevant theories and previous research, reflect on the complexity associated with the implementation of traceability in the supply chain,
- 3.4 for a given application scenario, assess how a traceability system should be designed.

## Forms of Teaching

The teaching consists of lectures, seminars, self-studies, presentations and written assignments in the form of written assignments.

The language of instruction is English.

## Forms of Examination

The course will be examined through the following examination elements:

*Assignment: written group assignment*

Learning outcomes: 2.1-2.4, 3.1-3.4

Credits: 3

Grading scale: Fail (U), Pass (G) or Pass with Distinction (VG)

*Presentation: oral group presentation*

Learning outcomes: 2.1-2.4, 3.1-3.4

Credits: 1

Grading scale: Fail (U) or Pass (G)

*Written exam: individual written exam*

Learning outcomes: 1.1-1.4, 2.2-2.4

Credits: 3.5

Grading scale: Seven-degree grading scale (A-F)

The student must pass all examination components (with at least E on the individual exam and Pass on the submission and presentation) to reach at least E in final grade. For the final grade A, Pass with distinction on the group assignment and A on the individual exam are required. For the final grade B, C, D or E, a minimum of Pass is required on the written group assignment and B, C, D or E on the individual exam

If the student has received a decision/recommendation regarding special pedagogical support from the University of Borås due to disability or special needs, the examiner has the right to make accommodations when it comes to examination. The examiner must, based on the objectives of the course syllabus, determine whether the examination can be adapted in accordance with the decision/recommendation.

Student rights and obligations at examination are in accordance with guidelines and rules for the University of Borås.

## Literature and Other Teaching Materials

- Agrawal, T.K., Sharma, A. and Kumar, V. (2018). Blockchain-based secured traceability system for textile and clothing supply chain. In: Thomassey, S. and Zeng, X. eds. *Artificial intelligence for fashion industry in the big data era*, Singapore, Springer, pp. 197-208.
- Lee, D. and Park, J. (2010). RFID-enabled supply chain traceability: existing methods, applications and challenges. In: Sustainable Radio Frequency Identification Solutions. In: Turcu, C. ed. *Sustainable radio frequency identification solutions*, London, IntechOpen, pp. 51-68.
- GS1 (2013). *Research Support for an Informal Expert Group on Product Traceability*. Brussels, European Commission.
- Budak, A., Ustundag, A., Kilinc, M.S. and Cevikcan, E. (2018). Digital Traceability Through Production Value Chain. In: Ustundag, A. and Cevikcan, E. (eds.). *Industry 4.0: Managing The Digital Transformation*. Cham, Springer, pp. 251-65.
- Kumar, S. and Cowles, J. (2007). RFID: Impact of Improved Supply Chain Traceability. In: Kumar, S. ed. *Connective Technologies in the Supply Chain*. New York, Auerbach Publications, pp 57-76.
- ElMessiry, M. and ElMessiry, A. (2018). Blockchain framework for textile supply chain management. In: Chen, S., Wang, H. and Zhang L.J. eds. *Blockchain – ICBC 2018. ICBC 2018. Lecture Notes in Computer Science*, Cham, Springer, pp. 213-27.
- Alves, B. et al. (2014). Fairtrace: applying semantic web tools and techniques to the textile traceability. In: Hammoudi, S., Cordeiro, J., Maciaszek, L. and Filipe, J. eds. *Enterprise Information Systems. ICEIS 2013. Lecture Notes in Business Information Processing*. Cham, Springer, pp. 68-84.
- Bechini, A., Cimino, M.G., Marcelloni, F. and Tomasi, A. (2008). Patterns and technologies for enabling supply chain traceability through collaborative e-business. *Information and Software Technology*, 50(4), pp. 342-359.

- Norton, T. et al. (2014). *A Guide to traceability. A practical Approach to Advance Sustainability in Global Supply Chain*. New York, United Nations Global Compact, available at [https://www.bsr.org/reports/BSR\\_UNGC\\_Guide\\_to\\_Traceability.pdf](https://www.bsr.org/reports/BSR_UNGC_Guide_to_Traceability.pdf)
- Mol, A. and Oosterveer, P. (2015). *Certification of markets, markets of certificates: Tracing Sustainability in global Agro-Food Value Chains. Sustainability*, 7(9), pp. 12258-78.

Additional course literature and other teaching materials are provided/informed about via the learning platform (max 200 pages). A selection of additional literature can be included in the course (maximum 200 pages).

### **Student Influence and Evaluation**

The course is evaluated in accordance with current guidelines for course evaluations at the University of Borås in which students' views are to be gathered. The course evaluation report is published and returned to participating and prospective students in accordance with the above-mentioned guidelines, and will be taken into consideration in the future development of courses and education programmes. Course coordinators are responsible for ensuring that the evaluations are conducted as described above.

### **Miscellaneous**

The course is a programme course for the Master's Programme in Textile Value Chain Management.