Fashion-tech value chains: opportunities and challenges offered by smart clothing and wearable technology

Mode-tech-värdekedjor: möjligheter och utmaningar med smarta kläder och kroppsnaå teknik

7.5 credits
7.5 högskolepoäng

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Ladok Code: AE1MT1
Version: 1.0
Established by: Committee for Education in Business and Working Life 2021-05-05
Valid from: Autumn 2021

Education Cycle: Second cycle
Main Field of Study (Progressive Specialisation): Textile Management (A1N)
Disciplinary Domain: Social sciences 50%, Technology 50%
Prerequisites: BSc. in Business Administration, Textile Management, Industrial Engineering, Textile Technology, Textile or Fashion Design, or equivalent. Furthermore knowledge in English equivalent to English 6.
Subject Area: Leadership, Organisation and Management
Grading Scale: Seven-degree grading scale (A-F)

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Content
The course focuses on the multidisciplinary field of Fashion Tech, aiming to advance students’ knowledge on how digital technologies combined with user centred approaches, such as data capture and usage by interactive fashion-tech products, affect the business processes in textile value chains to enable effective design of products and services (e.g. facilitating repeated use, remaining in circulation longer, use of less harmful materials, design for disassembly and end of life). The course will discuss the link between management, design, innovation, technology and customer to enhance fashion tech value chains competitiveness across the triple bottom line: economic, environmental and social/cultural sustainability.

Contents will be delivered through a preliminary theoretical part aimed to level the knowledge of the students as a prerequisite for the practical challenge-based part of the course. In the challenge-based part students will work in the interdisciplinary international groups to experience the process and the methodological approach of a project development activity that includes design, product life management, costing and pricing, research and materials management.

*Students will be selected from: Hogskolan i Boras - Swedish School of Textiles (Sweden), Politecnico di Milano - School of Design (Italy), University of the Arts London – London College of Fashion (UK), TU/Delft - Industrial Design Engineering Faculty (The Netherlands), Ecole supérieure des Technologies industrielles avancées – Graduate School of Advanced Industrial Technologies (France).

Learning Outcomes
Upon successful completion of the course the student should be able to:

Knowledge and Understanding
1.1 Identify and describe the opportunities and limitations of interactive wearable technology for product and process innovation in textile value chains, including longer use/circulation, sustainable supply chain management and design for environment,
1.2 Explain a range of interactive design research methods based on user data capture for development of effective and sustainable digital fashion system (covering textile value chain processes, products and services),
1.3 Recognize key issues related to ethical data management when applying interactive wearable technology to facilitate innovation in textile value chains,

Skills and abilities
2.1 Apply innovative research and methodological approaches in the multidisciplinary Fashion Tech context,
2.2 Develop insights into data capture and analysis from interactive fashion-tech products,
2.3 Analyze primary research data captured from application of interactive wearable technology and apply findings to design effective and sustainable fashion tech value chains and product/service offerings,
2.4 Develop business pitching skills in a professional manner appropriate for Fashion Tech industry and investors,
2.5 Develop abilities to engage in dialogue with various stakeholders across multiple disciplinary international contexts,

Evaluation ability and approach
3.1 Critically reflect from the SDG perspective on the economic, environmental, and societal impacts of business practices associated with use of fashion wearable technology.
3.2 With the support of theory formulation, critically reflect on complexities and ethical issues in fashion-tech value chains that arise due to data capture and usage by interactive fashion-tech products.

Forms of Teaching
Teaching comprises both theoretical and practical activities, including digital lectures, self-studies, written essays/tests, peer interaction via forum participation, tutoring/coaching session with industry and academia representatives, and the final project assignment. Students will also be introduced to innovative ways of teaching that are based on digital

The language of instruction is English.

Forms of Examination
The following examinations will form part of this course with respect to the stated learning objectives:

Examination: individual written exam
Learning outcomes: 1.1-1.3, 2.1-2.2, 3.2
Credits: 2.0
Grade: A-F

Written group report
Learning outcomes: 2.1-2.5, 3.1-3.2
Credits: 2.0
Grade: Pass/Fail

Presentation: oral group presentation
Learning outcomes: 2.4-2.5, 3.1-3.2
Credits: 2.0
Grade: Pass/Fail

Peer interaction via digital forum participation
Learning outcomes: 2.5, 3.1-3.2
Credits: 1.5
Grade: Pass/Fail

The grade for the full course is set according to the A-F scale and is determined by the grade on the written individual exam. To get the final grade for the course, the students should receive ‘pass’ on all other forms of examinations in addition to the written group report.

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 Methods


A selection of additional literature can be included in the course (maximum 300 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**

This syllabus is a translation from the Swedish original.

Course is given as an elective course.