UNIVERSITY OF BORÅS

Textile product design, construction and joining
Textil produktdesign, konstruktion och sammanfogning
7.5 credits

Ladok Code: AT2PD1
Version: 4.0
Established by: Committee for Education in Technology 2023-06-16
Valid from: Autumn 2023

Education Cycle: Second cycle
Main Field of Study (Progressive Specialisation): Textile Technology (A1N)
Disciplinary Domain: Technology 80%, Design 20%
Prerequisites: Admitted to Master Programme (Two Year) in Technical Textile Innovation
Subject Area: Textile Technology
Grading Scale: Seven-degree grading scale (A-F)

Content
The course provides an in-depth study of joining techniques and strategies (e.g. sewing, taping, welding, and lamination) of textile products and evaluates their suitability for different applications. The course highlights strategies for optimising textile product design with a focus on function, quality, and cost. Linked to these, different aspects of sustainable development are discussed.

The first part of the course includes understanding and analysis of the mechanical properties of joints for textile materials, as well as their impact on product design and construction. As part of this, the students will encounter 2D patterns as well as 3D visualisation as well as various machines for joining. The students will develop advanced skills in quality control and testing methods for textile products in the subject. The second part of the course covers innovative textile product design, which includes technical and smart textiles.

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

1. Knowledge and understanding
1.1. Describe techniques for joining textile products and their suitability for different applications.
1.2. Describe the mechanical properties of textile assemblies and their impact on product design and the function of the finished products.
1.3. Describe how pattern design interacts with joining techniques,
1.4. Based on 3D visualisation, communicate the design of joined products, and
1.5. Describe how assembly and integration of technical and smart textiles can be designed to work in given applications.

2. Competence and skills
2.1. Choose appropriate joining techniques depending on the properties, structure, and use of the textile materials,
2.2. identify different types of seam defects, explain the causes, and develop strategies to optimise quality, functionality, and costs as well as different aspects of sustainable development,
2.3. implement quality control measures and test methods for textile products with a focus on the joining, and
2.4. Communicate the desired joining technology to the production by means of specifications.

3. Judgement and approach
3.1 motivate and identify the possibilities and limitations of different joining techniques with application to textile products, and to evaluate this based on aspects such as: quality, sustainable development, costs, and user-friendliness.

Forms of Teaching

- Lectures
- Workshops
- Laboratoratory sessions
- Seminars

The language of instruction is English.

Forms of Examination

The course will be examined through the following examination elements:

Exam
Learning outcomes: All
Credits: 4
Gradingscale: Seven-degree grading scale (A-F)

Written assignment
Learning outcomes: 1.2-1.4, 2.1-2.4, 3.1
Credits: 3
Gradingscale: Seven-degree grading scale (A-F)

Oral presentation of assignment
Learning outcomes: 1.2-1.4, 2.1-2.4, 3.1
Credits: 0.5
Gradingscale: Fail (U) or Pass (G)

The final grade of the course is determined by the weighted average of the Exam and Written assignment.

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

Joining Textiles, Principles and Applications (2013), Jones I. and Stylios G.K. Eds, Woodhand Publishing Series in Textiles Jana, Prabir. (2011).

Other material is available via the university's learning platform.

The course literature is in English.

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.
Admitted to Master Programme (Two Year) in Technical Textile Innovation