UNIVERSITY OF BORÅS

Fibre technology I
Fiberteknik I
7.5 credits

Ladok Code: 52FT01
Version: 2.0
Established by: Research Board 2011-03-16
Valid from: Autumn 2012

Education Cycle: Second cycle
Main Field of Study (Progressive Specialisation): Textile Engineering (A1N)
Disciplinary Domain: Technology
Prerequisites: Bachelor's Degree in Textile Technology (or equivalent). For admission the applicant shall have passed 15 credits in mathematics, 7.5 credits in chemistry with at least half in organic chemistry, 7.5 credits in materials science with at least half in polymers and also 15 credits in textile manufacturing methods. The applicant shall also have documented English skills at B level.
Subject Area: Textile Technology
Grading Scale: ECTS-credits

Content
The course deals with natural and synthetic fibres, their fibre forming processes and structure-property relations in terms of:

- Fibre forming processes: Melt spinning and solution spinning (dry and wet spinning).
- Spinnability, rheology.
- Material flows in spin processes, shear, orientation and tenacity.
- Fibre development history: conventional fibres (Viscose, Nylon 66, Nylon 6, PET, PE).
- Natural fibres: Jute, banana leave, flax, rami, hemp and regenererated cellulose. Agriculture, processing and environmental impact.
- Drawing.
- Process parameters, post processing treatments.
- Non-wovens (fibre types, bonding chemistry, types: dry-laid, wet lay-applications.
- General fibre property charts.
- Yarn types (carded, combed etc) and mechanical properties.
- Material selection.
- Fibre testing.
- Fibre production waste management (both synthetic and natural fibres).
- Non wowen, fibre spinning and nanofibre practicals.

Learning Outcomes
After completing and passing the course, students should be able to:

• Calculate fibre properties based on spinning parameters.
• Master fundamental rheological concepts.
• Choose appropriate fibre for given application, considering properties and cost.
• Master end-of-life aspects of fibres in their given applications.
• Conduct the most essential fibre characterisation methods.

Forms of Teaching
The course consists of lectures, assignment and practical work.

The language of instruction is English.

Forms of Examination

The course is examined and assessed by the following steps:
• Written exam 6.0 Credits, Grade Scale: EC
• Practical work 1.5 Credits, Grade Scale: EC

Every examination step must be passed and the final grade is determined by the written exam.

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

Literature and Other Teaching Materials

Selected scientific papers for individual and group review, analysis and case studies.

Student Influence and Evaluation

The students' opinions are collected systematically and regularly through written course evaluations once the course is completed. One time per semester, student representatives, together with the Director of studies and Programme Directors, evaluate completed courses. For addition materials, please refer to the University's policy on course evaluation and documents established by the Department board, the Director of studies and the Programme director.

Miscellaneous

This course is primarily a programme course in the Master programme in textile engineering.