UNIVERSITY OF BORÅS

Smart textiles
Smarta textilier
22.5 credits
22.5 högskolepoäng

Ladok Code: 52SX01
Version: 2.0
Established by: The Teaching Committee 2012-09-17
Valid from: Autumn 2012

Education Cycle: Second cycle
Main Field of Study (Progressive Specialisation): Textile Engineering (A1N)
Disciplinary Domain: Technology
Prerequisites: Scientific method and communication 7.5 credits.
Subject Area: Textile Technology
Grading Scale: ECTS-credits

Content
The course consists of a number of modules that treat different aspects of functional and smart textiles. Since this is a problem based learning curriculum the students have the possibility to influence the final content that will be covered.

Still the following modules are compulsory:
- Comfort properties
- Human-textile interface
- Advanced coatings
- Electrically conducting textiles
- Textile sensors

Learning Outcomes
The examinee shall:
- be able to outline the properties of smart textiles and discuss current issues of the research frontier of at least one aspect of smart textiles.
- be able to discuss what and how different parameters affect the textile-human interface and the possibilities offered by textile sensors and conventional sensors applied in a textile context.
- tell how different types of coatings on textiles can enable new features.
- account for the options and limitations of electrically conducting and piezoelectric textiles.
- demonstrate an ability in international contexts to clearly present and discuss conclusions and the knowledge and arguments behind them, in dialogue with both industry representatives and laymen, orally and in writing.
- manage to plan and control project work, put it into perspective and consider society's requirements and expectations.
- demonstrate that he/she has taken charge of the learning process.

Forms of Teaching
The course, based on project based learning pedagogy, so called PBL consists of the following forms of teaching:
- Lectures, exercises and laboratory work
- Seminars with expertice from academia and industry.

- Assignments

The language of instruction is English.

Forms of Examination

The course is examined and assessed by the following four steps:

- Assignment 1 3.0 credits
- Assignment 2 6.5 credits
- Assignment 3 6.5 credits
- Assignment 4 6.5 credits.

  Assignment 1 is a lab diary.
  Assignment 2 is a prestudy presentation seminar.
  Assignment 3 is the project presentation seminar.
  Assignment 4 is the final project report. Grading: ECTS-grades.

  The student must pass all four assignments and they will all be considered for the assessment

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

Literature and Other Teaching Materials

During the progression of the course the students will identify their lacking skills and acquire the necessary literature to meet that demand. Scholars will offer guidance in this process.

L. van Langenhove. Smart textiles for medicine and healthcare. (2007). (1st) Cambridge, England: Woodhead Publishing. ISBN 1845690273.

Student Influence and Evaluation

Miscellaneous

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