COURSE SYLLABUS

Produkt- och tjänstesystemforskning
Product-Service System Design Research

7,5 ECTS credit points (7,5 högskolepoäng)

Course title and credit points
The course is titled Product-Service System Design Research/Produkt- och tjänstesystemforskning and awards 7,5 ECTS credits. One credit point (högskolepoäng) corresponds to one credit point in the European Credit Transfer System (ECTS).

Decision and approval
This course is established by Department of Mechanical Engineering 2013-05-29. The course syllabus was revised by School of Engineering and applies from 2013-07-01.
Replaces MT2510.

Objectives
The aims of the PSS Design Research course are to make students who are working on topics related to Design Science better qualified and equipped for their research by (i) helping them understand, and select a theoretical foundation, and also to develop a research approach, and (ii) make appropriate choices regarding methods and tools. The objectives are to provide the students with:
• insight into existing design theories and models to enable them to select a suitable theoretical foundation;
• an overview of design research methods to enable them to develop the most appropriate approach for their own situation;
• the opportunity to get to know and learn from researchers in the field

Content
• Design research history and background
• Research paradigm
• Design Science
• Research plans
• Qualitative methods
• Validation of research
• Case studies and examples

Aims and learning outcomes
On completion of the course the student will know:
• How design research is carried out
• Be able to do assessments of validity of research
• Plan the research
• Use qualitative and quantitative methods in design research
• Determine the nature of design and design research appropriate
• Formulating research questions/hypotheses
• Analyzing a design process
• Know about concepts, models, schools and theories of design and designing;
• Understand the nature and use of theories
• Be able to define his/her research focus

Generic skills
The following generic skills are trained in the course:
• Analytical thinking
• Application of scientific and engineering reasoning to problem solving
• Oral and written presentation

Learning and teaching
Course focus is to give the participant knowledge to understand theories and methodologies regarding design research and the planning of research. Through, lectures, workshops, assigned readings in the Product-Service System (PSS) field, and assignments students will gain an understanding of Product-Service System Design Research. Students will complete assignments on an individual or small group basis, and will share his/her learning with others through his/her written documents, group work and presentations.

Assessment and grading
Examination of the course

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<tr>
<th>Code</th>
<th>Module</th>
<th>Credit</th>
<th>Grade</th>
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1310 Reports  5 ECTS  A–F  
1320 Course project  2.5 ECTS  A–F  

The course will be graded A Excellent, B Very good, C Good, D Satisfactory, E Sufficient, FX Insufficient, supplementation required, F Fail. If grade FX are given, the student may after consultation with the course coordinator / examiner get an opportunity to within 6 weeks complement to grade E for the specific course element.

9 Course evaluation
The course coordinator is responsible for systematically gathering feedback from the students in course evaluations and making sure that the results of these feedback into the development of the course.

10 Prerequisites
This course is open to all students having at least 200 ECTS credit points of University study (or the equivalent). English language requirements are English A, or minimum score of IELTS 5.0 or TOEFL 500 (or equivalent).

11 Field of education and subject area
The course is part of the field of education and is included in the subject area Mechanical Engineering.

12 Restrictions regarding degree
The course cannot form part of a degree with another course, the content of which completely or partly corresponds with the contents of this course.

13 Course literature and other teaching material
Articles and white papers will be handed out during the course.
Course will rely on the following literature: