



KURSPLAN

Utveckling av sociotekniska system, 6 högskolepoäng

Engineering of Socio-technical Systems, 6 credits

Kurskod:	TUSG15	Utbildningsnivå:	Grundnivå
Fastställd av:	VD 2015-02-09	Utbildningsområde:	Tekniska området (95%) och samhällsvetenskapliga området (5%)
Gäller fr.o.m.:	2015-08-01	Ämnesgrupp:	DT1
Version:	1	Fördjupning:	GIN
Diarienummer:	JTH 2015/2142-313		

Lärandemål

After completing the course, the student shall

Kunskap och förståelse

- display knowledge of fundamentals of system thinking and socio technical systems
- display knowledge of hard- and soft system perspectives
- display knowledge of emergent and purposive behavior
- demonstrate comprehension of the engineering process (life-cycle) of socio technical systems

Färdighet och förmåga

- demonstrate skills of understanding, evaluation and design of socio technical systems through modeling
- demonstrate ability to apply methods for understanding, evaluation and design of socio technical systems

Värderingsförmåga och förhållningssätt

- demonstrate ability to choose an appropriate method for understanding, evaluation and design of socio technical systems

Innehåll

The course introduces systems thinking and describes its application to the concept of engineering complex systems, in which software plays a key role. The value of modelling itself is emphasised as a way of understanding and designing socio technical systems. Research and problem solving methods with a strong basis in the systems tradition are elaborated and used in the course.

The course includes the following topics:

- Systems thinking
- Hard and Soft systems
- Representing systems through modeling and models
- Soft Systems Methodology (SSM)
- Socio-technical systems and purposive behavior
- Complexity, chaos theory and emergent behaviour

Undervisningsformer

The course will consist of lectures, seminars, exercises and practical work.

Undervisningen bedrivs på engelska.

Förkunskapskrav

General entry requirements and Mathematics D or Mathematics 3c (or the equivalent). Proof of English proficiency is required..

Examination och betyg

Kursen bedöms med betygen 5, 4, 3 eller Underkänd.

The final grade for the course is based upon a balanced set of assessments. The final grade will only be issued after satisfactory completion of all assessments.

Poängregistrering av examinationen för kursen sker enligt följande system:

Examinationsmoment	Omfattning	Betyg
Examination	3 hp	5/4/3/U
Assignment	3 hp	5/4/3/U

Övrigt

Exemption from entry requirement allowed according to the selection groups of the program, where the course is included.

Kurslitteratur

The literature list for the course will be provided one month before the course starts.