



COURSE SYLLABUS

Safety and Security of Software Products, 6 credits

Säkra mjukvarusystem, 6 högskolepoäng

Course Code:	TSMS25	Education Cycle:	Second-cycle level
Confirmed by:	Dean Feb 9, 2015	Disciplinary domain:	Technology (95%) and social sciences (5%)
Valid From:	Aug 1, 2015	Subject group:	DT1
Version:	1	Specialised in:	A1F
Reg number:	JTH 2015/2099-313		

Intended Learning Outcomes (ILO)

After completing the course, the student shall

Knowledge and understanding

- demonstrate comprehension of basic safety and security terminology in the software domain
- be familiar with the role of safety and security standards in the development of products with software content
- display knowledge of some existing tools for evaluation software safety & security characteristics

Skills and abilities

- demonstrate ability to analyse safety and security domains, addressing their causal factors, commonalities and differences
- demonstrate an ability to identify interdependencies between the safety and security aspects of software products

Judgement and approach

- demonstrate an ability to choose appropriate techniques for ensuring safety and security at all stages in the software development lifecycle
- demonstrate understanding of the socio-technical dimensions of software safety and security

Contents

The course explores software functionality in terms of the impact and differences between safety and security as they pertain to software-based products and their dependency on hardware and information content. The course illustrates analytical and design considerations of how to deliver software that is safe to use and secure against intrusions and attacks.

The course includes the following topics:

- Safety and security failures of software systems
- The human and organisational aspects of software safety and security
- The role of safety and security standards
- Safety versus security, and cross-cutting issues
- Assessing safety and security (including risk management and hazard analysis)

- Software dependability engineering (including availability, reliability, redundancy, recovery and survivability)
- Designing for safety and security, and defensive techniques
- Safety and security software assurance

Type of instruction

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

The teaching is conducted in English.

Prerequisites

Passed courses 180 credits in first cycle, at least 90 credits within the major subject Computer Engineering, Electrical Engineering (with relevant courses in Computer Engineering), and 15 credits Mathematics. In addition, completed courses Industrial Product Realization – Process-Methods-Leadership, 9 credits and Software Engineering – a Product Perspective, 9 credits (or the equivalent). Proof of English proficiency is required.

Examination and grades

The course is graded 5,4,3 or Fail.

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.

Registration of examination:

Name of the Test	Value	Grading
Examination	3 credits	5/4/3/U
Assignment	2 credits	5/4/3/U
Laboratory	1 credit	U/G

Other information

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

Course literature

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