



Course Syllabus
Usability and Design of Interactive Systems

Användbarhet och design av interaktiva system

Course Code	2FS030	Main Field of Study	Systems Science for Defence and Security
Valid from Semester	Autumn 2023	Department	Department of Systems Science for Defence and Security
Education Cycle	Advanced level	Subject	Systems Science for Defence and Security
Scope	4.5	Language of Instruction	The teaching is conducted in English.
Progression	A1N	Decided by	The Research and Education Board's Course Syllabus Committee at the Swedish Defence University
Grading Scale	Fail, Pass, Pass with Distinction	Decision date	2022-08-23
Revision	1.1		

Entry Requirements

Passed courses of at least 180 credits that include

- at least 7,5 credits in the field of defence, crisis management, and security,
- a written thesis project of at least 15 credits

and knowledge corresponding to English 6 (B).

Course Content and Structure

The course covers central theories about, and methods for, design based on user needs, and with the usability of the designed system in focus. Particular attention is paid to theories and methods that are often used in development of systems for defence and security. One aim of the course is to offer the student personal experience with the challenges involved in considering the intended users in system development. The course is therefore examined by giving the student a task of proposing, comparing, and evaluating possible solutions to a minor user-related design problem.

Teaching will be conducted in the form of lectures and seminars in which the students are offered the opportunity to, with teacher support, discuss and reflect upon the course material. The students are also expected to independently search for relevant literature to develop knowledge within the framework of the course and guided by personal interests.

Intended Learning Outcomes

After completed course the student should be able to:

Knowledge and understanding

- describe and explain central theories and methods for user-centred design.

Competence and skills

- apply the theories and methods introduced during the course in a minor design task.

Judgement and approach

- critically examine, compare, and appraise design proposals from a user-centred perspective.

Type of Instruction

Seminars

Lectures

Independent Study

Assessment**Examination**

Scope: 4.5

Grading Scale: Fail, Pass, Pass with Distinction

Examination will be based on an individual written assignment.

Grading

Grades are set according to a three-grade scale: Fail (U), Pass (G), and Pass with credit (VG). Grading criteria are released no later than course start.

The examiner may decide that supplementary work is required in order for a passing grade to be achieved. Examination papers submitted late will not be graded, unless there are special reasons, which have been approved by the examiner.

Supplementary assignments are to be submitted no later than five working days after the notification of results and the supplementary assignment for the examination in question, unless there are special reasons, which have been approved by the examiner.

Restrictions in Number of Examinations

There is no limit on the total number of examination opportunities. The total number is restricted to one ordinary examination and two retakes in any two-term period, unless special circumstances exist that are acceptable to the examiner.

Restrictions Concerning Degree

The course cannot be included in a degree with another course whose content fully or partially corresponds to the content of this course.

Transitional Provisions

When a course is no longer provided or when the content of a course has been significantly altered, the student/participant retains the right to be examined in accordance with this course syllabus once per term during a three-term period.

Miscellaneous

The examiner may decide on alternative forms of examination for a student, if that student has an approval from the Swedish Defence University concerning special pedagogical support due to disability.

On the completion of the course, an evaluation will be conducted under the auspices of the course director which will form the basis for any changes to the course.



Reading List
Usability and Design of Interactive Systems

Användbarhet och design av interaktiva system

Course Code	2FS030
Revision	1.1
Reading List Valid from Date	2023-06-01
Reading List Decided Date	2023-06-01

Mandatory reading:

Benyon, D. (2019). *Designing User Experience: a guide to HCI, UX and interaction design* (4th ed.). Pearson UK. ISBN 978-1-292-15552-4. Chapter 1–6, 16, and 21–25

Available at Bokus, Adlibris or VitalSource

Endsley, M. R., & Jones, D. G. (2016). *Designing for situation awareness: An approach to user-centered design* (2nd ed.). CRC press. ISBN 978-1-4200-6358-5

Chapter 1 and 11

E-book available at ALB

Zhang, P., & Galletta, D. (2006). Foundations of Human-Computer Interaction in Management Information Systems: An Introduction. In P. Zhang & D. Galletta (Eds.), *Human-Computer Interaction and Management Information Systems: Foundations* (pp. 1–14). Armonk, NY, USA: M.E. Sharpe, Inc. ISBN 978-0-7656-1486-5

Excerpt (provided at the course beginning)

Reference literature (provided at the course beginning):

Benyon, D., & Macaulay, C. (2002). Scenarios and the HCI-SE design problem. *Interacting with Computers*, 14(4), 397–405.

Brehmer, B. (2007). Understanding the Functions of C2 Is the Key to Progress. *The International C2 Journal*, 1(1), 211–232.

Brehmer, B. (2008). Command and Control Research is a "Science of the Artificial". *Proc. of the 13th International Command and Control Research and Technology Symposium*.

Brehmer, B. (2009). From function to form in the Design of C2 Systems. *Proceedings from the 14th International Command and Control Research and Technology Symposium*, Washington, D.C.

Defence Standard 00-251: Human Factors Integration for Defence Systems

Part 0: Contracting for Human Factors Integration in Defence Systems

Part 1: Early Lifecycle Human Factors Integration Process Requirements

Part 2: Human Factors Integration Process Requirements for the Solution Provider

Part 3: Human Factors System Requirements

FMV. (2018). *Integration av humanfaktorer i försvarssystem (FSD 9251)*. Försvarets Materielverk. (In Swedish)

Hevner, A. R. (2007). A Three Cycle View of Design Science Research. *Scandinavian Journal of Information Systems*, 19(2), 87–92.

Hevner, A. R., March, S. T., Park, J., & Ram, S. (2004). Design Science in Information Systems Research. *MIS Quarterly*, 28(1), 75–105.

Shackel, B. (2009). Usability – Context, framework, definition, design and evaluation. *Interacting with Computers*, 21(5/6), 339–346.

Integration av humanfaktorer i försvarssystem (in Swedish)