UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Ergonomics Design and Evaluation Through Simulation G1F

6 credits

Course code: IP347G
Version number: 3
Valid from: 1 July 2024
Ratified by: Curriculum Committee for Engineering Science
Date of ratification: 8 February 2024

1. General information about the course

The course is provided by the University of Skövde and is named Ergonomics Design and Evaluation Through Simulation G1F (Ergonomisk design och utvärdering genom simulering G1F). It comprises 6 credits and is a first-cycle course. The level of progression is G1F.

The course is a part of the main field of study in Product Design Engineering. The course is a part of the subject of Integrated Product Development. The disciplinary domain of the course is Design.

2. Entry requirements

The course has the following entry requirements: passed IP343G Human Centred Design G1F and passed IP341G Product Development Methods and Strategies G1F and passed ST310G Statistics for Engineers I - basic course G1F (or the equivalent).

3. Course content

The course aims to give further insight into the interdisciplinary subject of ergonomics and specifically the focus area of physical ergonomics. The course contains elements of ergonomics simulation, use of anthropometric data in product design, biomechanical calculations and evaluation methods for physical ergonomics.

This knowledge is then used to carry out physical ergonomics evaluations for a product's different users.

4. Objectives

After completed course the student should be able to:

Knowledge and Understanding

- describe in general how the physical ergonomics of a product's different users can be evaluated in a product development process,
- explain how computer-based ergonomics evaluation tools can be used in a product development process,

Competence and Skills

- use ergonomic knowledge and methodology as well as computer-aided tools to design and evaluate products, environments and systems,
- visualize and communicate evaluations and analysis of physical ergonomics in the development of products, environments and systems,
- design products where ergonomic requirements are balanced with other product requirements, and

Critical Judgement and Approach

- analyze and discuss the advantages and disadvantages of different solutions as viewed from different perspectives in the design of products, environments and systems.

5. Examination

The course is graded A (Excellent), B (Very good), C (Good), D (Satisfactory), E (Sufficient) or F (Fail).

The final grade determines by the weighing of the results of the two examinations, were the respective examination are assigned the same weight. The final grade is issued only when all course units have been passed.

The examinations of the course consist of the following modes of assessment:

- **Individual assignment**
  3 credits, grades: A/B/C/D/E/F
- **Project presentation**
  3 credits, grades: A/B/C/D/E/F

Students with a permanent disability who have been approved for directed educational support may be offered adapted modes of assessment.

6. Types of instruction and language of instruction

The teaching is comprised of teaching lessons, laboratory sessions, group assignments, supervision and lectures.

The teaching is conducted in English.

7. Course literature and other educational materials

Berlin C. & Adams C. (2017). *Production Ergonomics. Designing Work Systems to Support Optimal Human Performance.* London: Ubiquity Press. ISBN 9781911529125.

Articles, reports and manuals made available at the start of the course.

Bridger, R.S. (2008). *Introduction to Ergonomics* (3th ed). Boca Raton: CRC Press. ISBN 9780849373060.

Pheasant, S. & Haslegrave, C.M. (2005). *Bodyspace: Anthropometry, Ergonomics and the Design of Work* (3th ed). London: Taylor & Francis. ISBN 0415285208.

8. Student influence

Student influence in the course is ensured by means of course evaluation. The students are informed about the results of the evaluation and potential measures that have been taken or are planned, based on the course evaluation.

9. Additional information

Further information about the course, as well as national and local governing documents for higher education, is available on the website of the University of Skövde.