



UNIVERSITY
OF SKÖVDE

COURSE SYLLABUS

Design Optimisation using Digital Human Modelling A1N

6 credits

Course code: VP740A

Version number: 4

Valid from: 1 July 2022

Ratified by: Curriculum Committee for Engineering Science

Date of ratification: 6 December 2021

1. General information about the course

The course is provided by the University of Skövde and is named Design Optimisation using Digital Human Modelling A1N (Designoptimering med digitala manikiner A1N). It comprises 6 credits and is a second-cycle course. The level of progression is A1N.

The course is a part of the main field of study in Virtual Product Realization. The disciplinary domain of the course is Technology.

2. Entry requirements

A Bachelor's degree equivalent to a Swedish kandidatexamen of 180 credits, within the main fields of integrated product development, production engineering, automation engineering, mechanical engineering or information technology (or the equivalent).

A further requirement is proof of skills in English equivalent of studies at upper secondary level in Sweden, known as the Swedish course English 6. This is normally demonstrated by means of an internationally recognized language test, e.g. IELTS or TOEFL.

3. Course content

This course explores the link between design methods, optimisation of design for ergonomic use, and the use of both traditional ergonomic evaluation methods and Digital Human Modelling (DHM) software.

In this course, students will apply design processes to a problem, synthesise a solution, and optimise that solution from an ergonomic perspective by using suitable evaluation methods.

4. Objectives

After completed course the student should be able to:

- argue and motivate for the integration of multiple ergonomic evaluation systems in a design project,
- apply ergonomic evaluation methods, including both traditional methods and Digital Human Modelling (DHM) software, on a design project,
- optimise a design for ergonomic usage and motivate/argue for choices, as well as motivate/argue for possible compromises.

TRANSLATION FROM SWEDISH

5. Examination

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

The course is examined through submissions from labs and a written report, as well as an oral presentation.

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

- **Written reports**
5 credits, grades: A/B/C/D/E/F (determines the final grade)
- **Oral presentation**
1 credit, grades: G/U

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

6. Types of instruction and language of instruction

The teaching is comprised of lectures and laboratory sessions.

The teaching is conducted in English.

7. Course literature and other educational materials

Scataglini, S. & Paul, G. (2019). *DHM and Posturography* (1st ed.). Academic Press Inc. ISBN 9780128167137. Selected parts.

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.