



## KURSPLAN

# Assistive Technology Design, 9 högskolepoäng

*Assistive Technology Design, 9 credits*

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<b>Kurskod:</b>	HATR21	<b>Utbildningsnivå:</b>	Avancerad nivå
<b>Fastställd av:</b>	Utbildningsrådet 2020-11-17	<b>Utbildningsområde:</b>	Tekniska området
<b>Gäller fr.o.m.:</b>	2021-03-01	<b>Ämnesgrupp:</b>	TE9
<b>Version:</b>	1	<b>Fördjupning:</b>	A1N
<b>Diarienummer:</b>	Department of Rehabilitation	<b>Huvudområde:</b>	Produktutveckling

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### Lärandemål

Upon completion of the course the student should have the ability to:

#### Kunskap och förståelse

- demonstrate knowledge of general tools and methods in product development
- demonstrate specialised knowledge of assistive technology in the context of product development
- describe methods for risk analysis, evaluation and project management.

#### Färdighet och förmåga

- apply methods for identification of customer needs and transfer these needs to technical criteria
- apply theoretical concepts and models to develop products which meet the needs of individuals
- apply product development and project management methods in practical work
- discuss the implications of a performed risk assessment
- work in a product development team.

#### Värderingsförmåga och förhållningssätt

- apply appropriate tools for product development in the context of assistive technology
- judge and suggest actions to improve products within the context of assistive technology
- show insight in the interests and expectations of different stakeholders on a product with focus on users, producers and society
- show an appreciation for the need to maintain a user perspective in the design and prescription of assistive technologies.

### Innehåll

The course gives a basic understanding of product development in an assistive technology context, within the field of mechanical engineering. One important aspect is the user perspective, where the requirements on designed devices may change for individuals with differing impairments. Design theories and methods for product development in an assistive technology context are introduced, as well as the relation between manufacturing processes and the low volume manufacturing assistive technology industry.

The course is divided in two parts, one theoretical part where tools and methods are introduced, and in parallel, a development project where the students work in groups to apply the methods when designing a real product.

The product design project will integrate tools and methods from the course content as well as knowledge from previous courses and the students will apply problem solving, critical and creative thinking. The project should, if possible, be done in collaboration with an external partner within the field of assistive technology.

The course includes the following elements:

- ideation
- the voice of the customer from a user perspective
- concept development
- analyzing existing products
- concept selection
- practical project work and planning

### Undervisningsformer

The course gives different perspectives on product development through guest lecturers from companies working knowledgeable with the current theme. Students complete exercises in project groups.

Undervisningen bedrivs på engelska.

### Förkunskapskrav

The applicant must hold a minimum of a Bachelor degree or equivalent (i.e. the equivalent of 180 ECTS credits at an accredited university) in prosthetics and orthotics or mechanical engineering. Proof of English proficiency is required.

### Examination och betyg

Kursen bedöms med betygen A, B, C, D, E, FX eller F.

Examination of the course will be based on project work including presentation and documentation and one individual written exam.

A senior lecturer serves as examiner for the course.

In individual written examination FX will not be applied.

Poängregistrering av examinationen för kursen sker enligt följande system:

Examinationsmoment	Omfattning	Betyg
Project work, presentation and documentation	6 hp	A/B/C/D/E/FX/F
Individual written exam	3 hp	A/B/C/D/E/FX/F

### Kurslitteratur

Jackson, B., & Parry, K. (2011). *A very short fairly interesting and reasonably cheap book about studying leadership*. Sage.

Oishi, M. M. K., Mitchell, I. M., & Van der Loos, H. M. (Eds.). (2010). *Design and use of assistive technology: social, technical, ethical, and economic challenges*. Springer Science & Business Media.