



KURSPLAN

Introduction to Engineering Sciences - Bridging Course, 15 högskolepoäng

Introduction to Engineering Sciences - Bridging Course, 15 credits

Kurskod:	HIER20	Utbildningsnivå:	Avancerad nivå
Fastställd av:	Utbildningsrådet 2020-05-14	Utbildningsområde:	Tekniska området
Gäller fr.o.m.:	2020-08-17	Ämnesgrupp:	TE9
Version:	1	Fördjupning:	A1N
Diarienummer:	Department of Rehabilitation	Huvudområde:	Produktutveckling

Lärandemål

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

Kunskap och förståelse

- describe design principles of mechanical design
- explain various machine elements
- describe the working principles of Computer Aided Design (CAD) systems and various digital formats
- recognise the importance of styling in industrial design
- show familiarity with the working principles of Finite Element Method (FEM) programs.

Färdighet och förmåga

- create solid and surface models in CAD
- conduct basic finite element calculations
- select and analyse machine elements such as screws and bearings
- assess the styling of individual products or product lines.

Värderingsförmåga och förhållningssätt

- appreciate the role of the results of finite element calculations for assistive technology design.

Innehåll

- introduction to mechanical design
- machine elements
- introduction to CAD
- CAD modeling using SolidWorks software
- principles of industrial design
- introduction to FEM including basic calculations

Undervisningsformer

The course is implemented through lectures, assignments and individual and group tutorials.

Undervisningen bedrivs på engelska.

Förkunskapskrav

The applicant must hold the minimum of a Bachelor's degree or equivalent (i.e. the equivalent of 180 ECTS credits at an accredited university) in Prosthetics and Orthotics. 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 upon one individual written exam and individual assignments.

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
Individual written exam	7,5 hp	A/B/C/D/E/FX/F
Individual assignments	7,5 hp	U/G

Kurslitteratur

Ullman, D. (2017). The mechanical design process. Boston, MA: McGraw-Hill Education, Asia.
ISBN 9780071267960