



COURSE SYLLABUS

Mechanics related to Prosthetics and Orthotics, 7.5 credits

Mechanics related to Prosthetics and Orthotics, 7,5 högskolepoäng

Course Code: HMPG18	Education Cycle: First-cycle level
Confirmed by: Utbildningsrådet Nov 28, 2017	Disciplinary domain: Technology
Revised by: Utbildningsrådet Apr 9, 2024	Subject group: MT2
Valid From: Aug 26, 2024	Specialised in: G1N
Version: 4	Main field of study: Prosthetics and Orthotics

Intended Learning Outcomes (ILO)

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

Knowledge and understanding

- explain elementary functions and their properties
- explain vectors and common vector operations
- explain central concepts within mechanics.

Skills and abilities

- solve equations and algebra expressions containing elementary functions
- use vectors and vector calculations to solve geometrical problems in two and three dimensions
- use free body diagrams and express mechanical equilibrium for a system
- solve rigid-body calculations
- discuss mechanical problems and solutions.

Judgement and approach

- reflect on and choose appropriate strategies for solutions
- judge if a solution is within reason.

Contents

Mathematics:

- derivatives and integrals
- differential equations
- trigonometric functions
- vectors

Mechanics:

- Newton's laws of motion
- classical mechanics, force, moment, free body diagram, static equilibrium, friction
- kinetics, kinematics, speed, acceleration, movement in cartesian coordinates

- work, energy, power,
- center of mass

Type of instruction

The course is implemented through lectures, group work and seminars.

The teaching is conducted in English.

Prerequisites

General entry requirements and Mathematics 3c, Physics 2 (or the equivalent).

Examination and grades

The course is graded A, B, C, D, E, FX or F.

Examination of the course will be based upon one written examination.

A university lecturer serves as examiner for the course.

Registration of examination:

Name of the Test	Value	Grading
Written examination	7.5 credits	A/B/C/D/E/FX/F

Course literature