



COURSE SYLLABUS

Orthotic Management and Biomechanics II, 7.5 credits

Orthotic Management and Biomechanics II, 7,5 högskolepoäng

Course Code: HOMN13	Education Cycle: First-cycle level
Confirmed by: Utbildningsrådet Apr 11, 2023	Disciplinary domain: Medicine
Revised by: Utbildningsrådet Apr 9, 2024	Subject group: MT2
Valid From: Autumn 2024	Specialised in: G2F
Version: 2	Main field of study: Prosthetics and Orthotics

Intended Learning Outcomes (ILO)

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

Knowledge and understanding

- explain the biomechanical properties of the trunk and neck related to orthotic interventions
- compare the mechanical properties of various orthotic components and devices
- compare different orthotic management options for lower limb, trunk and neck
- explain how a client centered approach is used in developing individual goals.

Skills and abilities

- apply a client centered approach throughout the course
- justify the choice of orthotic interventions using mechanical and biomechanical principles
- generate client management decisions based upon best available evidence
- perform independent assessments of a client and design a management plan
- design and manufacture an orthotic device in accordance with the management plan
- select and use appropriate outcome measures to evaluate interventions regarding function, quality and safety
- summarize and document clinical processes in a client's simulated medical record in accordance with regulations.

Judgement and approach

- critically evaluate one's own performance throughout the course,
- demonstrate professionalism in contact with clients and peers, ensuring that all interactions are made with respect, empathy, honesty and with consideration of cultural diversity and life situations
- distinguish when a client benefits from interprofessional teams and what other health professionals can contribute to the management plan
- reflect on an intervention considering ethical, personal, social, and societal factors.

Contents

- orthotic treatment for lower limb including knee and hip (KAFO, HpO, HKO, HKAFO)*
- orthotic treatment for trunk and neck (SIO, LSO, TLSO, CO, CTO, CTLSO)*

- scoliosis management
- seating treatment and devices
- external devices for soft tissues relating to thorax and pelvis (e.g. hernia truss, breast prostheses)
- biomechanics of the trunk and neck
- client centered care and application of ICF in treatments.

*Abbreviations of orthoses according to ISO 8549-3.

Type of instruction

The course is implemented upon a combination of client centered practical sessions, case based teaching, workshops and lectures.

The teaching is conducted in English.

Prerequisites

General entry requirements and passed courses in semester 1, 2, and 3, and taken courses in semester 4 from the Prosthetics and Orthotics Bachelor Programme, or equivalent.

Examination and grades

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

The course examination will be based upon an individual written examination and performance in practical examinations.

Practical Examination elements include workshops and laboratory sessions which will only be provided once per group of students during the course, due to the complexity and one-off nature, and required sequence of this content.

A university lecturer serves as examiner for the course.

Registration of examination:

Name of the Test	Value	Grading
Individual written examination	5.5 credits	A/B/C/D/E/FX/F
Practical examinations	2 credits	U/G

Other information

Temporary interruption of a course

The School of Health and Welfare may suspend a student's participation in clinical training or other practical activities during the course if a student demonstrates gross unfitness/ incompetence when applying skills. A student whose work-based training or other practical activities have been canceled due to gross inadequacy/incompetence may not continue study before the course director or examiner has verified and approved that the student has the knowledge and skills required. In connection with a decision on suspension, the decision will specify the grounds on which the suspension is based. After the decision, an individual plan will

be established for the student where knowledge and skills gaps are specified, the degree of support the student is entitled to, and the terms and date(s) for examination(s).

Course literature

Chui, K.C., Yen, S.C., Lusardi, M.M., & Jorge, M. (Eds). (2020). *Orthotics & prosthetics in rehabilitation* (4th. ed.). Elsevier Saunders.

Webster, J., & Murphy, D. (Eds). (2019). *Atlas of orthoses and assistive devices* (5th. ed.). Elsevier.

Fisk, J.R., Lonstein, J.E., & Malas, B.S. (2017). *The Atlas of Spinal Orthotics. Exceed Worldwide.*

McRae, R. (2010). *Clinical orthopaedic examination* (6th. ed.). Churchill Livingstone/Elsevier.

The most recent editions of the course literature should be used.

Additional relevant journal articles will be used.