Kursplan

Course Title:	Prosthetics and Orthotics Theory/ Ortopedteknik, teori
Level:	Basic
Higher Education Credits:	10,5
Depth of Study:	C
Education Area:	Technique, TE
Subject Area:	Prosthetics and Orthotics, OTE

Approved by: Chairperson of the Educational Council on May 15, 2009
Revised by: Revised by: Educational council on September 21, 2009
Validity: The syllabus is valid as of October 19, 2009
Course code: HOTC19

1. Organisation

This course is compulsory for all students enrolled in the prosthetics and orthotics degree program, 180 higher aducation credits. The course may however be taken as an individual subject. One week of full-time study is equivalent to 1,5 higher education credits and comprises a minimum of 40 hours of study.

2. Goals

Upon completion of the course students should have the;

Knowledge and understanding in order to

- synthesize and relate knowledge from current scientific literature
- explain a high level of knowledge related to the mathematical basis of relevant statistical tests and the selection of appropriate analysis methods
- explain theoretical and practical elements associated with scientific study design.
- explain the theoretical base for product development.

Skills and abilities in order to

- critically evaluate current scientific research in relation to
  - scientific methodology and statistical analysis
  - relevance to prosthetics and orthotics clinical practice
- identify and evaluate levels of evidence for solving clinically oriented problems

- compare and contrast new and novel methods to those that are currently used in clinical practice
- justify and debate decisions in both written and oral formats
- identify and apply appropriate statistical analysis techniques to analyse research findings.

Attitudes and relations in order to

- demonstrate insight into the benefits of working with and learn from other professional groups
- identify individual and professional needs for knowledge and competence development.

3. Contents

- evidence based practice in the clinical environment
- outcome measures and quality systems in health care
- reliability and validity of clinical measures
- health economics in prosthetics and orthotics
- interface mechanics – current research findings and trends
- methods for product development
- Cad-Cam technology in prosthetics and orthotics
- osseointegration – clinical applications and research findings
- embedded systems and applications within prosthetic and orthotic
- amputee sports research
- review of statistical methods of conclusion
- statistical methods for multivariate data analysis
- analysis of non-parametric data
- statistical power and power analysis

4. Examination

4.1 Examination form

Examination will be based upon two oral presentations in groups, one individual oral presentation, one written assignment in quality improvement and one individual written examination of statistical methods. Participation in biweekly journal club discussions is also required.

4.2 Examiner

An assistant professor will serve as examiner for this subject.

5. Course literature

Ullman, D. G. (2003). *The mechanical design process*. Boston: McGraw-Hill.

Students may select one of the following texts;

Eilertsson, G. (2003). *Statistik för hälsovetenskaperna.* Lund: Studentlitteratur.

Kirkwood, B. and Sterne, J. (2003). Medical Statistics, Second edition. Blackwell Science, Massachusetts.

Relevant journal articles.

6. Course Prerequisites

The requirements for entry into this course are passing grades in Orthopaedic Technology, intermediate (30 higher education credits) and participation in Orthopaedic Technology, deepening (12 higher education credits).

7. Course model and selection

This course is an intermediate course.

Selection:
Students within the Study Program in Prosthetics and Orthotics at School of Health Sciences, Jönköping University.

8. Course structure

This course is presented in the form of lectures, group work, seminars and laboratory sessions.

9. Additional Regulations

9.1 Attendance requirements

During the course attendance is compulsory to Journal Clubs.

9.2 Rate of study

The course is run on a full-time basis.