



**Karolinska  
Institutet**

Course syllabus for

# **Human Movement - Clinical Movement Analyses, 15 credits**

Människan i rörelse - rörelseanalys i praktiken, 15 hp

This course syllabus is valid from spring 2018.

Please note that the course syllabus is available in the following versions:

Autumn2016 , Autumn2017 , Spring2018

|                            |   |
|----------------------------|---|
| Course code                | 2QA254  |
| Course name                | Human Movement - Clinical Movement Analyses                       |
| Credits                    | 15 credits  |
| Form of Education          | Higher Education, study regulation 2007                           |
| Main field of study        | Physiotherapy   |
| Level                      | Second cycle, has only first-cycle course/s as entry requirements |
| Grading scale              | Pass, Fail  |
| Department                 | Department of Neurobiology, Care Sciences and Society             |
| Decided by                 | Styrelsen för utbildning  |
| Decision date              | 2016-03-08  |
| Revised by                 | Education committee NVS   |
| Last revision              | 2017-12-05  |
| Course syllabus valid from | Spring 2018   |

## **Specific entry requirements**

Degree of Bachelor of Science in Physiotherapy of at least 180 credits or a Bachelor's Degree in Physiotherapy. And proficiency in Swedish and English equivalent to Swedish B/Swedish 3 and English A/English 6.

## **Objectives**

On completion of the course, the student should be able to

- account for and discuss theories and models in motor control and balance
- carry out biomechanical calculations and to put the emerged results in relation to comparable situations and normative data.
- perform and to account for a basic analysis of human gait
- carry out a profound movement analysis of functional movements for prevention/treatment/evaluation of acute and persistent sickness conditions in adults, children and in elderly.

- critically review the methodology that is used in biomechanical calculations and movement analysis.

## Content

The course is mainly directed to health professionals that work with physical function assessment and movement analysis in primary care, occupational health services, specialist care, preventive health care or sports medicine.

The course is divided in two modules: a component directed towards theoretical aspects in human movement science and a component that is directed towards practical functional movement analysis.

### Motor control, gait and biomechanics, 5.0 hp

Grading scale: GU

Module 1 contains:

- Theories of motor control, balance and movement control
- Biomechanical models and calculations of static positions
- Practical gait analysis

### Functional movement analyses, 10.0 hp

Grading scale: GU

Module 2 contains:

- Analysis of posture
- Motor skills (children)
- Balance (elderly)
- Analyse of functional movements and tests of movement control in healthy individuals (e.g. in sports medicine and work ability) and individuals with acute and persistent health disorders
- Analyse of functional tests and movement control tests for screening and evaluation

## Teaching methods

The working methods of the course give the student the opportunity to active take responsibility for his/her learning. Varying educational methods will be used during the course such as lectures and demonstrations, group assignments, self-study and distance learning (assigned questions, literature studies). The student is assumed to work with course assignments between the course dates through the web-based learning platform.

Compulsory attendance is required at course start and at the theoretical and practical components as stated in the timetable. In case of absence from compulsory education parts, the course coordinator decides if and how absence from compulsory educational modules can be recouped. Before the student has participated in all the compulsory education modules in accordance to the instructions of the course coordinator, the learning outcomes cannot be reported.

## Examination

Module 1 is examined in a formative way through active participation in seminars, practical exercises and group presentations, as well as through written assignments during the course.

Module 2 is examined through a movement analysis of an optional movement that is presented in a written report that is written according given instructions, and been presented and discussed orally in a seminar.

Students who do not pass a regular examination are entitled to re-sit the examination on five more occasions. Examination that is based on attendance may be substituted with an examination in other form.

## Other directives

Some teaching may be in English.

## Literature and other teaching aids

*Everett, Tony; Kell, Clare.*

**Human movement : an introductory text.**

6th ed. : Edinburgh : Churchill Livingstone/Elsevier, 2010. - xi, 268 p.

ISBN:978-0-7020-3134-2 LIBRIS-ID:12031188

[Library search](#)

*Heijne Wiktorin, Christina von; Nordin, Margareta*

**Tillämpad biomekanik**

2., [omarb.] uppl. : Lund : Studentlitteratur, 2012 - 292 s.

ISBN:978-91-44-05713-2 LIBRIS-ID:12323542

[Library search](#)

*Hamill, Joseph; Knutzen, Kathleen; Derrick, Timothy R.*

**Biomechanical basis of human movement**

4. ed., North American Ed : Philadelphia, Pa. : Wolters Kluwer Health, cop. 2015 - xi, 484 p.

ISBN:9781451177305 LIBRIS-ID:17425733

[Library search](#)