



**Karolinska  
Institutet**

Course syllabus for

## **Medical Audiology, 12 credits**

Medicinsk audiologi, 12 hp

This course has been cancelled, for further information see Transitional provisions in the last version of the syllabus.

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

Autumn2016 , Autumn2017 , Spring2024

Course code	1AU052
Course name	Medical Audiology
Credits	12 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Audiology
Level	G1 - First cycle 1
Grading scale	Pass, Fail
Department	Department of Clinical Science, Intervention and Technology
Decided by	Education committee Clintec
Decision date	2016-05-04
Revised by	Education committee CLINTEC
Last revision	2017-04-27
Course syllabus valid from	Autumn 2017

## **Specific entry requirements**

Mathematics 2a / 2b / 2c, Natural Sciences 2, Social Sciences 1b / 1a1+1a2 (field specific entry requirements A14). Or: Mathematics B, Natural Sciences B, Social Sciences A (field specific entry requirements 16).

## **Objectives**

The general aim of the course is that the student should acquire advanced knowledge of the hearing and balance system's, physiology and the central nervous system. This knowledge is the basis for courses as audiological pathology, diagnostics and rehabilitation. The course builds on the basic course Anatomy and Physiology.

Learning outcomes of the course

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

- describe and understand how the central and peripheral nervous system is organized
- describe the functions of the sensory and motor components of the nervous system

- describe and understand how the nervous system's various parts work together in the higher cognitive functions
- explain how neurological disorders and diseases can affect sensory, motor, cognitive and executive functions
- know how a neuropsychological assessment is done and which actions could follow such an evaluation
- explain the hearing and balance system's physiology
- understand and describe different mechanisms of damage to hearing and balance system
- explain basic genetics and the embryology of the central nervous system and the hearing and balance system
- read and explain a scientific article orally within the subject area
- assess and reflect on their own achievements

## Content

The course consists of two modules:

**The function of the central nervous system, 6 hp** An overview of the functional organization of the central nervous system with emphasis on the sensory and motor systems, as well as the higher cognitive functions.

The course also provides an overview of the development of the brain as well as education on how neurological disorders may occur.

The anatomy of the brain is repeated.

A seminar is included where students learn about how a neuropsychological assessment is done and the actions it can lead to. **The fysiology of the hearing and balance system, 6 hp** Hearing and balance system physiology is reviewed both peripherally and centrally. The auditory physiology focuses on a deeper understanding of how the auditory system is structured and how it functions normally and how sound is converted into nerve signals. Different mechanisms of injury are reviewed.

This module also gives knowledge of basic genetics and a review of the nervous system as well as the embryology of the hearing and balance system.

## Teaching methods

Lectures, excercises, and seminars

Seminars are compulsory. In case of absence from a compulsory part, the student is responsible for contacting the course coordinator for complementary assignment.

The course coordinator decides how absence from compulsory course elements can be made up. Study results cannot be reported until the student has participated in compulsory course elements or compensated for any absence in accordance with instructions from the course coordinator. Absence from a compulsory course element could mean that the student can not retake the element until the next time the course is offered.

## Examination

The function of the central nervous system 6 credits

The fysiology of the hearing and balance system 6 credits

Seminar presentations

Written examination

For a Pass grade in the course, attendance and active participation in compulsory parts are also required. Students who do not pass a regular examination are entitled to re-sit the examination on five more occasions. Each time the course is offered, one regular examination and two additional examinations are

given. Each occasion the student participates in the same test counts as an examination. Supplementary addition to a written assignment is counted as an examination. Submission of a blank exam paper is regarded as an In case a student is registered for an examination but does not attend, this is not regarded as an examination.

## Transitional provisions

Examination may take place under the previous reading list during a period of one year after the renewal of the reading list. Examination will be provided during a period of two years after a close-down of the course.

## Other directives

The course evaluation will be carried out according to the guidelines that are established by the Board of education. The course evaluation will be carried out both through a written course evaluation at the end of the course, and through an oral course forum at least once in connection with the course, during which the students can state their opinions.

## Literature and other teaching aids

### Mandatory literature

*Pinel, John P. J.*

#### **Biopsychology**

Ninth edition. : - xxii, 552 pages

ISBN:9780205915576 (alk. paper) LIBRIS-ID:16015641

[Library search](#)

*Pinel, John P. J.; Edwards, Maggie*

#### **A colorful introduction to the anatomy of the human brain : a brain and psychology coloring book**

2 ed. : Boston, Mass : Allyn and Bacon, c2008 - xiv, 231 p.

ISBN:978-0-205-54874-3 LIBRIS-ID:11439884

[Library search](#)

*Pickles, James O.*

#### **An introduction to the physiology of hearing**

Fourth edition : Leiden : Brill, 2013 - xxiii, 430 pages

ISBN:9789004243774 LIBRIS-ID:17415410

[Library search](#)

Scientific papers and other relevant literature may be added.

*Rouse, Matthew H.*

#### **Neuroanatomy for speech language pathology and audiology**

Burlington, MA : Jones & Bartlett Learning, [2016] - xiv, 266 pages

ISBN:9781284023060 LIBRIS-ID:17849287

[Library search](#)

*Musiek, Frank E.; Baran, Jane A.*

#### **The auditory system : anatomy, physiology, and clinical correlates**

Boston : Pearson/A and B, c2007. - xvii, 370 p.

ISBN:9780205335534 LIBRIS-ID:16981044

[Library search](#)

*Clark, William W; Ohlemiller, Kevin K*

**Anatomy and Physiology of Hearing for Audiologists**

Cengage Learning, 2007 - 480 s

ISBN:1401814441 nbn:ISBN-13 9781401814441

*This book is not available from the publisher anymore. Please find it in the library etc.*

[Library search](#)

*Gelfand, Stanley A.*

**Hearing : an introduction to psychological and physiological acoustics \**

5. ed. : London : Informa Healthcare, c2010. - 1 online resource (vii, 311 p.)

ISBN:9781420088663 (electronic bk.) LIBRIS-ID:11940787

URL: [Table of Contents / Abstracts](#)

<http://www.crcnetbase.com/isbn/9781420088656>

[Library search](#)