Course syllabus for

Ocular anatomy, physiology and diseases 1, 7.5 credits

Ögats anatomi, fysiologi och sjukdomar 1, 7.5 hp
This course syllabus is valid from spring 2022.
Please note that the course syllabus is available in the following versions:
Spring2020 , Spring2022 , Autumn2022 , Spring2025

Course code	1OP068
Course name	Ocular anatomy, physiology and diseases 1
Credits	7.5 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Not applicable
Level	GX - First cycle
Grading scale	Pass with distinction, Pass, Fail
Department	Department of Clinical Neuroscience
Decided by	Utbildningsnämnden CNS
Decision date	2019-10-23
Revised by	Education committee CNS
Last revision	2021-09-29
Course syllabus valid from	Spring 2022

Specific entry requirements

No specific entry requirements are required.

Objectives

After the course, the student should be able to

1) describe and explain the osteology of the orbit, and its blood supply and innervation.
2) describe and explain the sclera, the cornea, the conjunctiva and limbus/the border between the cornea and the conjunctiva and their structure and function,
3) describe and explain the lens, ciliar body, iris and accommodation mechanism including anterior chamber, posterior chamber, aquas humor, and the intra ocular pressure
4) describe and explain for human ocular accommodation - how it be stimulated and changes with age, and describe and account for pupil reactions and how these are connected with the accommodation
5) describe and explain the external parts of the eye (eyelids and lacrimal system), the structure and function of the tear film and who to measure the stability of the tear film (BUT, NIBUT),

6) describe and explain the external muscles - their process, function, movement and innervation and vascular supply of the eye
7) Perform and interpret pressure measurings (IOP), pupillay respons test and evaluate the main parts of the eye whit the slit lamp
8) list and make differential diagnosis of injuries and diseases in the main parts of the eye and in the aging eye (rear and main parts), and
9) describe differences in occurrence of diseases in the main segments of the eye based on an ethnic and global health perspective.

In supplements to above the student should, in a level adapted optometry, care and scientific perspective be able to

10) ability to distinguish knowledge at the scientific level
11) describe different scientific types of publications and about the disciplinary foundation of the field
12) ability to distinguish and combine relevant information from scientific literature and to discuss new facts, phenomena and issues and
13) large ability to orally and account in writing too and discuss information, problem and solutions in dialogue with different groups.

Aim 10-13 should be seen in relation to the document "Vetenskaplig strimma Optikerprogrammet" (Scientific streak of the optometry program)

Content

The course includes the following: anatomy, physiology, diseases in the main parts of the eye, diseases in the aging the eye and study and evaluation of main segments. In addition, the course is part of the scientific streak within the program. In connection with the Scientific streak of the optometry program, students are introduced in a level and subject-adapted way to science, science and proven experience as well as scientific communication. They will also develop knowledge and understanding, skills and abilities, judgement and their scientific thought - and attitude in relation to optometry and a lifelong learning. The teaching of general scientific knowledge is described in a separate document.

The course is divided in the following three modules:

Clinical work, 2.0 hp

Grading scale: GU

The module includes written assignments, group assignment, clinical work and practical test in clinical practical methodology.

Theoretical understanding, 4.5 hp

Grading scale: VU

The module includes theoretical understanding and renewal of the topic-specific contents of the course.

Scientific development, 1.0 hp

Grading scale: GU

The module includes assignments in KI's virtual learning environment, the scientific streak and written assignments.

Teaching methods

The course includes self-studies, demonstrations, test, theoretical overviews (in the form of e.g. lectures, seminars, flipped-classroom, case methods), practical/clinical exercises, portfolio and written

assignments.
The students are given a possibility to train practical skills but must take a great responsibility themselves.

Some course elements are compulsory, see heading "Examination".

Examination

The course is examined in the following way:

Module 1, Clinical work
a) practical test in slit lamp, is graded U or G
b) compulsory seminars as per schedule
c) compulsory portfolio according to instructions

The module is graded U or G. The grade G requires G on practical test as well as fulfillment of compulsory course elements.

Module 2, Theoretical understanding
a) written examination, graded U, G or VG
Re-examination may take place orally.
b) compulsory seminars as per schedule

The module is given the grade U, G or VG. The grade G requires G on written examination, and fulfillment of compulsory course elements. The grade VG requires VG on written examination, and fulfillment of compulsory course elements.

Module 3, Scientific development
a) compulsory assignments in KI's virtual learning environment
b) written assignments, graded U or G
c) compulsory seminars as per schedule, a part of the scientific streak of the programme

The module is graded U or G. The grade G requires G on all written assignments b), and fulfillment of compulsory course elements.

Course grade
The entire course is graded U, G or VG. The grade G on the entire course requires G on all modules. The grade VG requires G on module 1 and 3 and VG on module 2.

Absence from or unfullfillment of compulsory course element
The examiner decides whether, and if so how, absence from or unfulfillment of compulsory course elements can be made up for. Study results cannot be reported until the student has participated in or fulfilled compulsory course elements, or compensated for any absence/ failure to fulfill in accordance with instructions from the examiner. Absence from or unfulfillment of a compulsory course element may imply that the student can not retake the element until the next time the course is offered.

Limitation of the number of tests or practical training sessions
Student who do not pass the regular examination is entitled to re-sit the examination at five more occasions. If the student has carried out six failed tests, no further examination opportunity is given. As examination, the times are counted when the student has participated in the same test. Examination to which the student registered, but not participated, be counted not as examination. To be valid for judgement, the examination must be submitted at the given time, or the student will be referred to the next examination occasion.

Possibility of exception from the course syllabus' regulations on examination
If there are special grounds, or a need for adaptation for a student with a disability, the examiner may decide to deviate from the syllabus's regulations on the examination form, the number of examination opportunities, the possibility of supplementation or exemptions from the compulsory section/s of the course etc. Content and learning outcomes as well as the level of expected knowledge, skills and attitudes may not be changed, removed or reduced.

Transitional provisions

If the course is cancelled or goes through substantial changes, information about interim regulations will be stated here.

Other directives

Course evaluation takes place according to guidelines established by Karolinska Institutet. Compilation of the students' answers in course questionnaires and the course coordinator's analysis of these are published on KI's public course web.

Some teaching may be in English.

Literature and other teaching aids

Mandatory literatur

Clinical ophthalmology : a systematic approach
Kanski, Jack J.; Bowling, Brad; Nischal, Ken K.; Pearson, Andrew

7. ed. : Edinburgh : Butterworth-Heinemann, 2011 - ix, 909 s.
ISBN:978-0-7020-4093-1 (hbk.) LIBRIS-ID:12189545
Library search

Remington, Lee Ann.
Clinical anatomy and physiology of the visual system

3rd ed. : St. Louis : Elsevier/Butterworth-Heinemann, c2012. - ix, 292 p.
ISBN:1437719260 LIBRIS-ID:20698295
Library search

Recommended literature

Lönwe, Bo
Ögonsjukdomar i primärvården
Tornqvist, Kristina; Bengtsson-Stigmar, Elisabeth

[Ny utg.] : Malmö : Leo Pharma Nordic, cop. 2005 - 123 s.
ISBN:91-974368-4-4 LIBRIS-ID:10697668
Library search

Bergmansson, Jan P.G
Clinical ocular anatomy and physiology

Texas eye research and technology center, 2009 - 218 p
ISBN:13:978-0-9800-708-1-1
Library search

Ehlers, Justis P.; Shah, Chirag P.
The Wills eye manual : office and emergency room diagnosis and treatment of eye disease.

5th ed. /b editors, Justis P. Ehlers, Chirag P. Shah ; associate editors, Gregory L. Fenton, Eliza N. Hoskins, Heather : Philadelphia : Wolters Kluwer / Lippincott Williams & Wilkins, c2008. - xvii, 455 p.
ISBN:978-0-7817-6962-4 LIBRIS-ID:11823109
Library search

Lang, Gerhard K.

Ophthalmology : a short textbook

Stuttgart : Thieme, 2000 - 586
ISBN:3131261617
Library search

Saude, Trygve

Ocular anatomy and physiology

London : Blackwell Science, cop. 1993 - vii, 168 s.
ISBN:0-632-03599-4 LIBRIS-ID:9066980
Library search