



**Karolinska  
Institutet**

Course syllabus for

## **Basic Optometry 2, 15 credits**

Refraktionsmetodik 2, 15 hp

This course syllabus is valid from autumn 2022.

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

Spring2020 , Spring2022 , Autumn2022

|                            |   |
|----------------------------|---|
| Course code                | 1OP069                                  |
| Course name                | Basic Optometry 2                       |
| Credits                    | 15 credits                              |
| Form of Education          | Higher Education, study regulation 2007 |
| Main field of study        | Optometry                               |
| Level                      | G1 - First cycle 1                      |
| 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              | 2022-02-23                              |
| Course syllabus valid from | Autumn 2022                             |

## **Specific entry requirements**

Matematik 2a, 2b or 2c, Naturkunskap 2.

## **Objectives**

After the course, the student should be able to

- 1) apply binocular/monocular refraction based on retinoscopy value and evaluate the reasonableness in relation to visus and medical history of the result
- 2) apply refraction without objective start value
- 3) apply cardiopulmonary resuscitation
- 4) describe, apply and interpret refraction and preliminary optometric tests and put the test results in relation to anamnes
- 5) describe and give an account of contrast vision and relate result to different conditions
- 6) describe and account for the preconditions and function of the binocular vision and foris and tropies - cause, occurrence, classification and related symptoms
- 7) list and handle various types of multifocal glass and describe their properties
- 8) apply instruments for measure the lens (focimeter) to verify all types of glass

- 9) apply and interpret wavefront measurements
- 10) reason about sustainable development as a concept and as an integrated (ecological, economic and social) perspective on social progress and man's interplay with nature - particularly from an optometric perspective.
- 11) discuss ethical aspects of vision and scientific methodology
- 12) reflect on issues of ethics, sustainable development and equal opportunities
- 13) reflect on her own and other professions' role in contributing to sustainable eye health care development.

In addition to above the student should also, in an appropriate level, based on optometry, care and scientific perspective

- 14 show ability to review knowledge at a scientific level
- 15) show understanding about different scientific types of publication and about the disciplinary foundation of the field
- 16) show the ability to compare and put together relevant information from scientific literature and discuss new facts, phenomena, hypothesis and issues.

Aim 14-16 should be seen in relation to the document "Vetenskaplig strimma Optikerprogrammet" (Scientific Thread in Study Programme of Optometry).

## Content

The course includes the following: Phoropter, retinoscopy, contrast, luminance, CPR, wavefront measurements, different glass types, material- and instrument knowledge, refraction for different patient groups and continuation of preliminary tests, and binocular vision tests, test for suppression, fusion and stereoscopic vision, measurement of phoria and tropia and focimeter. Relevant statutes about e.g. confidentiality, medical records keeping and ethical aspects in care and science and sustainable development in an optometric health care perspective.

In addition to this the course is part of the teaching of general scientific knowledge within the program. In relation to teaching of general scientific knowledge, the students will continue to broaden their knowledge related to the scientific base of optometry, best practice and scientific communication. They will also develop his knowledge and understanding, his skills and abilities his judgement and his 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

Module 1 include written assignments, group assignment, workshop, clinical work, attendance on compulsory parts and practically methodology in focimeter for attestation of all types of glass.

### Practical skills, 6.0 hp

Grading scale: GU

Module 2 includes the ability to carry out and reflect around practical examination methodology.

### Theoretical understanding, 7.0 hp

Grading scale: VU

Module 3 includes theoretical understanding of the course contents.

## Teaching methods

The course includes self-study, demonstrations, test, laboratory sessions, 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 focimeter, is graded U or G
- b) compulsory portfolio according to instructions
- c) compulsory seminars and demonstrations as per schedule

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, Practical proficiency*

- a) practical test in refraction, binocular vision tests, preliminary tests, is graded U or G

The module is graded U or G. The grade G requires G on practical test.

### *Module 3, Theoretical understanding*

- a) written examination, is graded U, G or VG

Re-examination may take place orally.

The module is given the same grade as the written exam, U, G or VG.

### *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 2 and VG on module 3.

### *Absence from or unfulfillment 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.

### *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.

The course may be given in parallel with the course Optics 2 (KTH) and is based on knowledge acquired at the course.

Some teaching may be in English.

## Literature and other teaching aids

### *Mandatory literatur*

*Benjamin, William J.; Borish, Irvin M.*

#### **Borish's clinical refraction**

2nd ed. : St. Louis, Mo. : Butterworth-Heinemann/Elsevier, c2006. - xviii, 1694 p.

ISBN:0-7506-7524-1 LIBRIS-ID:10580274

[Library search](#)

*Scheiman, Mitchell; Wick, Bruce*

#### **Clinical management of binocular vision : heterophoric, accommodative, and eye movement disorders**

Fourth edition. : Philadelphia, Pennsylvania : Lippincott Williams & Wilkins, 2014 - ix, 722 pages

ISBN:9781451175257 LIBRIS-ID:16337727

[Library search](#)

### *Recommended literature*

*Rabbetts, R. B.*

#### **Clinical Visual Optics**

4:e upplaga : Oxford: Butterworths - 488s. : 2007

ISBN:0-7506-8874-2

[Library search](#)

#### **Clinical procedures in primary eye care**

*Elliot, David B.*

3rd ed. : Edinburgh ;a New York : Elsevier/Butterworth Heinemann, 2007 - xii, 342 p.

ISBN:978-0-7506-8896-3 LIBRIS-ID:11008167

[Library search](#)

*Grosvenor, Theodore P.*

#### **Primary care optometry**

5th ed. : St. Louis, Mo. : Butterworth-Heinemann/Elsevier, c2007 - xiii, 510 p.

ISBN:0-7506-7575-6 LIBRIS-ID:10438993

[Library search](#)

*Evans, Bruce J. W.; Pickwell, David.t Binocular vision anomalies*

#### **Pickwell's binocular vision anomalies**

5. ed. /b Bruce J.W. Evans : Edinburgh ;a New York : Elsevier Butterworth Heinemann, 2007 - 454 s.

ISBN:978-0-7506-8897-0 LIBRIS-ID:10659509

[Library search](#)

*Steinman, Scott B.; Steinman, Barbara A.; Garzia, Ralph P.*

#### **Foundations of binocular vision : a clinical perspective**

New York : McGraw-Hill Co., c2000. - xi, 345 p.

ISBN:978-0-8385-2670-5 (alk. paper) LIBRIS-ID:11950260

[Library search](#)

**Foundations of binocular vision [Ljudupptagning] : a clinical perspective**

*Steinman, Scott B.; Steinman, Barbara A.; Garzia, Ralph Philip; Nygaard, Ragnhild*

Johanneshov : TPB, 2010 - 1 CD-R (29 tim., 5 min.)

LIBRIS-ID:12620973