



**Karolinska  
Institutet**

Course syllabus for

## **Environmental Optometry, 6 credits**

Arbetsplatsoptometri, 6 hp

This course syllabus is valid from spring 2021.

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

Spring2021 , [Spring2023](#) , [Spring2024](#)

Course code	1OP077
Course name	Environmental Optometry
Credits	6 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Optometry
Level	G2 - First cycle 2
Grading scale	Fail (U), pass (G) or pass with distinction (VG)
Department	Department of Clinical Neuroscience
Decided by	Education committee CNS
Decision date	2020-10-14
Course syllabus valid from	Spring 2021

### **Specific entry requirements**

Passed results of at least 45 credits from the Study Programme in Optometry semester 1 and 2.

Students who have failed their VIL (clinical training opportunity) after demonstrating serious deficiencies in understanding, skill, or professional attitude, and done this to the degree that client or patient safety or client/ patient/ employer trust for the healthcare have been jeopardised, will qualify for a new VIL opportunity only after completion of an individual action plan.

### **Objectives**

After the course, the student should be able to

- 1) list and describe physical, organisational and social working environment factors in the working life
- 2) describe and critically assess an employee's work station in terms of visual ergonomics
- 3) describe and critically assess the illumination conditions of a workplace.
- 4) evaluate the quality of a screen
- 5) comprise a critical examination of relations that influence the visual quality in relation to visual ergonomics, illumination and monitor quality and apply this to an improvement for the employee on the workplace
- 6) list and describe how optical radiation may cause damage to the eye and how to prevent/protect against it

- 7) prescribe and fit special correction in relation to occupational needs
- 8) be able to understand and apply legislation that regulates the field of occupational optometry.

In addition to the above the student should, in a level-suited optometry-, care- and scientific perspective, be able to

- 9) search, collect, and describe information in a presented problem, and discuss phenomena, issues and situations critically
- 10) independently identify, formulate and solve problems in writing, and carry out assignments within given time frames, and
- 11) formulate scientific text in writing.

Aim 9-11 should be seen in relation to the document "Vetenskaplig strimma Optikerprogrammet" (Scientific streak in optometry program).

## Content

This course consists of the following components: laws regulating the field of workplace medicine; repetitive motion injuries; healthcare in Sweden; visual ergonomics and illumination; visual quality; computer screen quality and psychosocial workplace conditions. Various types of work stations is covered, such as working at a computer screen or monitor, working in office or in other occupational environments. The course also covers interaction between the ocular media and optical radiation, protective eyewear against optical radiation, and it contains clinical training opportunity (VIL).

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 continue to broaden their knowledge related to the scientific base of optometry, science and proven experience and scientific communication. They also develop their knowledge and understanding, skills and abilities, their judgement, scientific thought and attitude, in relation to optometry and a lifelong learning. The teaching of general scientific knowledge is described in a separate document.

A project work is included in the course with the intention to evaluate, understand and apply related legislation, visually ergonomic aspects of working environment and factors in organisational and social working environment, based on a scientific thought and attitude.

The project work consists of

- a working place visit with evaluation of the working environment with respect to the employee's background facts, repetitive strain status and visually ergonomic status based on the appearance of the workplace
- (when relevant) an evaluation of monitor/screen quality
- occupational adapted correction and in addition choice of occupational adapted correction glass type.

The course is divided in the following three modules:

### **Clinical work, 2.5 hp**

Grading scale: GU

The module includes VIL, portfolio, the project work and formative assessment of clinical proficiencies and patient care.

### **Theoretical understanding, 2.5 hp**

Grading scale: VU

The module includes theoretical understanding and revenue 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 comprises self-study, demonstrations, laboratory sessions, theoretical overviews (in the form of lectures, seminars, flipped-classroom, case methods), practical exercises and written assignments. The students are given a possibility to train practical skills but must take a great responsibility themselves.

## Examination

*Module 1, Clinical work*, examines the learning outcomes 1 up to 8.

- a) compulsory participation in patient care in connection with VIL
- b) compulsory portfolio according to instructions
- c) compulsory project work
- d) compulsory seminars, laboratory sessions and demonstrations as per schedule

The module is given the grade Fail or Pass.

The grade Pass requires fulfillment of compulsory course elements.

*Module 2, Theoretical understanding*, examines the learning outcomes 1 up to 11.

- a) written examination (Fail/Pass/Pass with distinction)
- Re-examination may take place orally.
- b) compulsory seminars, laboratory sessions and demonstrations as per schedule

The module is given the grade Fail, Pass or Pass with distinction.

The grade Pass requires Pass on written examination, and fulfillment of compulsory course elements. Pass with distinction requires Pass with distinction on written examination, and fulfillment of compulsory course elements.

*Module 3, Scientific development*, examines the learning outcomes 1-11.

- a) compulsory written assignments according to instructions
- b) compulsory presentation of project work
- c) compulsory seminars, a part of the scientific streak of the programme

The module is given the grade Fail or Pass. Pass requires fulfillment of compulsory course elements.

### *Course grade*

The entire course is given the grade Fail (U), Pass (G) or Pass with distinction (VG).

The grade Pass on the entire course requires Pass on all modules. Pass with distinction requires Pass on module 1 and 3, and Pass with distinction on module 2.

### *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.

### *Limitation of the number of practical test or training sessions*

Students who do not pass a regular examination are entitled to re-sit the examination on five more occasions. If the student has carried out six failed tests, no further examination opportunity is given. Each occasion the student participates in the same test counts as an examination. In case a student is

registered for an examination but does not attend, this is not regarded as an 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.

Regarding VIL, the number of times a student has the right to participate/go through the course and be assessed on the same is limited to two (2) times.

#### *Guidelines for canceling a VIL opportunity*

The examiner may, with immediate effect, interrupt a student's clinical placement (or equivalent) if the student demonstrates such serious deficiencies in knowledge, skills or attitude that patient safety or patient confidence in healthcare is at risk. If a clinical placement is interrupted in this way the student is deemed to have failed that element and to have used up one clinical placement opportunity. In such cases, an individual action plan should be set up stating which activities and tests are required before the student is qualified for a new clinical placement on the course.

#### *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 undertakes major revisions, you will find information on transition rules under this heading.

## **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 literature***

*Anshel, Jeffrey*

#### **Visual ergonomics handbook**

*Anshel, Jeffrey*

Boca Raton, FL : Boca Raton, FL : CRC Press, 2005 - 214 s.

ISBN:1-5667-0682-3 LIBRIS-ID:9793733

[Library search](#)

### ***Reference literature***

*Boyce, Peter R.*

#### **Human factors in lighting**

2. ed. : London : Taylor & Francis, cop. 2003 - xvi, 584 s.

ISBN:0-7484-0950-5 (pbk. : alk. paper) LIBRIS-ID:8900742

[Library search](#)

*Jeis, Ola*

**Ljus & rum Ljus och rum : planeringsguide för belysning inomhus**

*Franzell, Magnus*

3. utg. : Stockholm : Ljuskultur, cop. 2013 - 191 s.

ISBN:9789163724886 LIBRIS-ID:14007335

[Library search](#)

*Nyman, Karl-Gösta; Spångberg, Olle*

**Syner, ögat, arbetet : synergonomi, ögats funktioner, skaderisker i arbetet, skyddsåtgärder, råd**

*Gross, Cinna*

2., rev. utg. : Karlskrona : Futura, cop. 1996 - S. 3-160

ISBN:91-7095-073-3 (korr.) LIBRIS-ID:8228531

[Library search](#)

**Handbook of human factors and ergonomics**

*Salvendy, Gavriel*

4. ed. : Hoboken, NJ : Wiley, 2012 - xx, 1732 p.

ISBN:9780470528389 LIBRIS-ID:13897713

[Library search](#)

*Sheedy, James E.; Shaw-McMinn, Peter G.*

**Diagnosing and treating computer-related vision problems**

Amsterdam : Butterworth-Heinemann, cop. 2003 - xi, 281 s.

ISBN:0-7506-7404-0 LIBRIS-ID:8747329

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