



Sveučilište u Rijeci • Fakultet dentalne medicine
University of Rijeka • Faculty of Dental Medicine

Course: Ophthalmology

Course coordinator: Prof.dr.sc. Goran Pelčić, MD.

Department of Ophthalmology

Study programme: Integrated undergraduate and graduate university study of Dental Medicine

Year of study: 3rd

Academic year: 2022/2023

COURSE SYLLABUS

Course information (brief description of the course, general instructions, where and in what form classes are organized, necessary accessories, instructions on attendance and preparation for classes, student obligations, etc.):

Ophthalmology is a compulsory course in the third year of integrated undergraduate and graduate university study of Dental Medicine and consists of 10 hours of lectures and 5 hours of exercises, a total of 15 hours. The courses are performed at the Clinical Hospital Center Rijeka.

The aim of the course is to provide basic knowledge and skills in the field of ophthalmology. The goal is to get to know students with the technique of complete eye examination as well as the most important procedures in the diagnosis and treatment of eye diseases. New convenings and facts from ophthalmic microsurgery have been adapted to dental students.

Content of ophthalmology courses:

A historical review of ophthalmology. General eye exam. Orbit. The tear device. Eyelids. staple. Cornea. The whites of the eyes. Lens. Diseases of the middle eye sheath. Glaucoma. Retina. Neuroophthalmology. Ophthalmic optics, refractions, and refractive anomalies. Eye mobility and eye mobility disorders. Eye injuries. Nanotechnology in ophthalmology. Drugs and an eye.

Teaching:

Classes are taught in the form of lectures and exercises. The estimated duration of classes is a total of 4 days. During the exercises, the teacher shows and supervises the active participation of students in the performance of exercises. Teachers discuss with students the specifics of performing a particular exercise. During the classes, mandatory colloquiums will be held, and at the end of the classes a written test and an oral final exam will be held.

List of mandatory exam literature:

Ralston SH, Penman ID, Strachan MWJ, Hobson RP. Davidson's Principles and Practice of Medicine. 23rd ed. Edinburgh, Elsevier, 2018. (selected chapter)

List of supplementary literature:

Jack J. Kanski, B.Bowling, ur. **Clinical ophtahalmology a systematic approach**, Seventh edition. Elsevier Saunders, Edinburgh, London, New York, Oxford, Philadelphia, St. Louis, Sydney, Toronto 2011.

Syllabus:

List of lectures (with titles and clarification):

P1. Introduction to ophthalmology and historical review.

Learning outcomes:

Introduce students to the aim of a course in ophthalmology.

Meet students and adopt knowledge about the historical facts of the development of ophthalmology.

P2. Orbital diseases, a tear apparatus, and an eyelid.

Learning outcomes:

Describe and explain diagnosis and therapy of diseases of the orbit of the tear apparatus and eyelids.

Describe the vascular congenital anomalies of the orbital region, vascular intra-orbital processes, inflammatory orbit processes, exophthalmus in systemic diseases, endocrine egfortalmus, orbital tumors, orbital injuries, causes of enophthalmus. Explain dry eye syndrome. Name the most important diseases of the draining tearways and diseases of the lacrimal gland. Describe the most common diseases of the eyelids.

P3. Diseases of the coupling and cornea.

Learning outcomes:

Describe diagnosis and therapy of diseases of the coupling and cornea.

Describe the most important signs and types of conjunctivitis, degenerative diseases of the coupling, coupling tumors. Describe the superficial inflammation of the cornea, epidemic keratitis, herpetic keratitis symptomatology, allergic keratitis, corneal ulcers and degenerative changes in the cornea.

P4. Diseases of the iris and ciliary body.

Learning outcomes:

Acquire knowledge, skills of diagnosis and therapy of diseases of the iris and ciliary body.

Describe and explain the function of the iris. The most important congenital anomalies of the iris.

Describe iridocyclitis, a type of iridocyclitis.

P5. Refractive disorders, lens disease.

Learning outcomes:

Describe and explain diagnosis and therapy of diseases of refraction disorders and lens diseases. Name the most common refractive anomalies, definition and therapy. Describe the acuity of vision and the determination of refraction. Describe the accommodation mechanism and meaning. Prescribe glasses and contact lenses. Classify the types of cataracts. Cataract surgery. What are the complications of cataract surgery. Define afakia and how it is corrected.

P6. Glaucoma and diseases of the optic nerve.

Learning outcomes:

Describe and explain diagnosis and therapy of glaucoma and diseases of the optic nerve. Definition of glaucoma and division. Describe the homeostasis of the eye. Medication treatment of glaucoma. Surgical treatment of glaucoma. Absolute glaucoma. Hypotonia of the eye. Visual nerve description. Papilla stagnans description and consequences. Papilitis. Neuritis retrobulbaris. List the more important causes of retrobulbar bleeding in the optic nerve.

P7. Eye mobility and eye mobility disorders.

Learning outcomes:

Describe and explain diagnosis and therapy of eye mobility and mobility disorders.
Describe the degrees of binocular vido. Competitive strabismus. Heterophoria. Heterotropy. Convergent strabismus. Paralytic strabismus. Nystagmus. Pleoptics: diagnosis of amblyopia in the squinting eye. Fixation testing. Pleoptic exercises. Types of ambliopia. The definition of orthooptics.

P8. Eye injuries.

Learning outcomes:

Describe and explain diagnosis and therapy of eye injury. Describe the contusions of the eyeball. Contusions of the eye adnexes. Describe perforative injuries to the eye and eye adnexes. Foreign bodies in orbit and the eye. Sympathetic ophthalmia.

P9. Diseases of the choridaea and retina.

Learning outcomes:

Describe and explain skills of diagnosis and therapy of diseases of the middle eye envelope and retina. Describe the types of choriorethinitis with respect to localization. degenerative diseases of the choroid. Choroid tumors. Corioid ablation. Diseases of the retina describe obstruction art. centralis retina and vene centralis retina. Retina ablation. Causes of retinitis centralis. Degenerative changes in the retina in high myopia. Retinal tumors.

P10. Nanotechnology in ophthalmology.

Learning outcomes:

Describe and explain diagnosis and therapy of diseases using nanotechnological methods. Describe diagnostic and therapeutic nanotechnological methods in glaucoma, corneal, retinal and optic nerve diseases, and eye nanosurgery.

List of seminars with clarification:

List of exercises with clarification:

Ex.1. Ophtalmological history, ophthalmic documentation. Eye inspection and palpation.
Learning outcomes: analyze ophthalmic patient, perform patient history, preform eye inspection and palpation.
Ex. 2. Focal lighting, pocket lamp testing. Testing with a biomicroscope with a rift lamp.
Learning outcomes: perform eye examination and tests.
Ex. 3. Twisting the constellation (ectropication of eyelids). A swab of the coupling. Examination of the tear apparatus. Corneal reflex. Fluorescein rehearsal. Ophthalmoscopy- enlightenment of transparent eye media and examination of the eye background.
Learning outcomes: demonstrate swab collection.
Ex.4. Examination of the pupils. Examination of the reaction of pupils to light (direct and indirect). Examination of visual acuity. Examination of the peripheral vision-of-the-vision of the field of vision by the medox of confrontation.
Learning outcomes: perform and demonstrate ophthalmic examination.
Ex.5. Examination of color sensations with pseudoisochromatic tables. Digital measurement of očng pressure. Eye motility testing (ductions, versions, vergence), cover and detection test (Cover-uncover test). Application of eye drugs: drops and ointments. A bandage on the eye.
Learning outcomes: perform and demonstrate ophthalmic examination, perform tests and apply local therapy.
Exercises in ophthalmology courses are performed at the Ophthalmology Clinic of the Clinical Hospital Center Rijeka.

Before accessing the exercises, students are obliged to adopt theoretical knowledge that they will perform practically.

Student obligations:

Students are obliged to regularly attend and actively participate in all forms of teaching.

Exam (method of exam, description of the written/oral/practical part of the exam, scoring method, evaluation criteria):

The evaluation of students is carried out according to the current Ordinance on studies of the University of Rijeka.

The work of students will be evaluated and evaluated during the performance of classes, and in the final exam. Out of a total of 100 points, during class the student can score 70 points, and in the final exam 30 points.

Student evaluation is done using ECTS (A-E) and the numerical system (1-5). Evaluation in the ECTS system is carried out by absolute distribution, and according to the graduate evaluation criteria.

Of the maximum 70 scoring points that can be achieved during class, the student must collect a minimum of 35 scoring points to take the final exam. Students who collect less than 35 grade points will have the opportunity for one remedial inter-examination and, if they meet the exam at this interim exam, they will be able to take the final exam.

The student earns grade points by actively participating in the classes, performing the tasks set and going to the interim examination as follows:

I. During class, it is evaluated (maximum up to 70 points):

- a) attendance (up to 5 points)
- b) mandatory colloquium (up to 40 points)
- c) mandatory test (up to 25 points)

Attendance (up to 5 points)

The student may miss 30% of the classes solely for health reasons, which he justifies with a doctor's note. Attendance at lectures and exercises is mandatory. Reimbursement of exercises is possible with prior agreement with the course coordinator.

If the student is absent from more than 30% of classes, he cannot continue following the course and loses the possibility of taking the final exam. This collected 0 ECTS credits and was rated F.

Scoring attendance in class (lectures and exercises) will be performed as follows:

% attendance	rating points
70 – 85	3
86 – 100	5

a) Mandatory colloquium (up to 40 points)

During class, all students are obliged to join the colloquium where they acquire a maximum of 40 points (range from 22-40).

During the performance of colloquiums, the leader evaluates the adopted knowledge and skill of each

student and evaluates the points as follows:

rating	score points
Sufficient	22
Good	28
Very good	34
Excellent	40

c) Mandatory test (up to 25 points)

The written test consists of 40 questions, and carries 25 rating points (range from 15-25; the criterion for obtaining scoring points is 50% of the correctly resolved questions).

Points earned on a written test are converted to grade points as follows:

Correct answers	rating points
0-20	0
21	15
22	16
23, 24	17
25, 26	18
27, 28	19
29, 30	20
31, 32	21
33, 34	22
35, 36	23
37, 38	24
39, 40	25

Final exam (30 rating points in total)

Who can take the final exam:

Students who have scored more than 35 points during class are obliged to take the final exam where they can achieve a maximum of 30 points.

Who can't take the final exam:

Students who have scored less than 35 points during class are not entitled to take the final exam (they are enrolling in the course of the second year).

The final exam is an oral exam. Carries 30 rating points (range from 15-30).

Success in the final exam is translated into grade points as follows:

Rating	score points
Insufficient	0
Sufficient	15
Good	20
Very good	25
Excellent	30

To pass the final exam and final grade (including the addition of previously achieved grade points during class), the student in the final exam must be positively rated and achieve a minimum of 15 scoring points (50%).

Evaluation in the ECTS system is carried out by absolute distribution, that is, based on the final achievement:

A = excellent (5)
 B = very good (4)
 C = good (3)
 D = sufficient (2)
 F = insufficient (1)

The possibility of teaching in a foreign language:

Other notes (related to the course) important for students:

Teaching content and all course-related notices as well as exam tremines can be found on the website of the Department of Ophthalmology.

Schedule (for academic year 2022/2023)

Date	Lectures (time and place)	Seminars (time and place)	Practicals (time and place)	Teacher
13.01.2023.	L1,L6 (13,00-15,00)			Prof.dr.sc. Goran Pelčić, dr. med.
			P1. (15,00-16,00) Eye clinic	Prof.dr.sc. Goran Pelčić, dr. med. Prof.dr.sc. Tea Mance , dr.med.
16.01.2023.	L3,L4,L5 (8,00-11,00)			Prof.dr.sc. Tea Mance , dr.med.
			P2,P3 (11,00-13,00) Eye clinic	Prof.dr.sc. Goran Pelčić, dr. med. Prof.dr.sc. Tea Mance , dr.med.
17.01.2023.	L2,L7,L9 (8,00-11,00)			Prof.dr.sc. Damir Kovačević, dr. med.
			P4 (11,00-12,00) Eye clinic	Prof.dr.sc. Damir Kovačević, dr. med. Prof.dr.sc. Tea Mance
18.01.2023.	L8,L10			Doc.dr.sc. Goran Pelčić, dr. med.

	(8,00-10,00)			
			P5 (10,00-11,00) Eye clinic	Doc.dr.sc. Goran Pelčić, dr. med. Prof. dr. sc. Tea Mance

List of lectures, seminars and exercises:

	LECTURES (lecture topic)	Number of hours	Venue
L1	Introduction to ophthalmology and historical review.	1	Clinical hospital Rijeka
L2	Orbital diseases, a tear apparatus and an eyelid.	1	Clinical hospital Rijeka
L3	Diseases of the conjunctivae and cornea.	1	Clinical hospital Rijeka
L4	Diseases of the iris and ciliary body.	1	Clinical hospital Rijeka
L5	Refractive disorders, lens disease.	1	Clinical hospital Rijeka
L6	Glaucoma and diseases of the optic nerve.	1	Clinical hospital Rijeka
L7	Eye mobility and eye mobility disorders.	1	Clinical hospital Rijeka
L8	Eye injuries.	1	Clinical hospital Rijeka
L9	Diseases of the choroid and retina.	1	Clinical hospital Rijeka
L10	Nanotechnology in ophthalmology.	1	Clinical hospital Rijeka
	Total number of lecture hours	10	

	PRACTICALS (topic)	Number of hours of classes	Venue
P1	Ophthalmic history, ophthalmic documentation. Eye inspection and palpation.	1	Clinical hospital Rijeka
P2	Focal lighting, pocket lamp testing. Testing with a biomicroscope with a ruptured lamp	1	Clinical hospital Rijeka
P3	Twisting the constellation (ectropication of eyelids). A swab of the coupling. Examination of the tear apparatus. Corneal reflex. Fluorescein rehearsal. Ophthalmoscopy- enlightenment of transparent eye media and examination of the eye background.	1	Clinical hospital Rijeka
P4	Examination of the pupils. Examination of the reaction of pupils to light (direct and indirect). Examination of visual acuity. Examination of the peripheral vision-of-the-vision of the field of vision by the medox of confrontation.	1	Clinical hospital Rijeka
P5	Examination of color sensors with pseudo-isochromatic tables. Digital measurement of IOP. Eye motility testing (ductions, versions, vergence), cover and detection test (Cover-uncover test). Application of eye drugs: drops and ointments. A bandage on the eye.	1	Clinical hospital Rijeka
	Total number	5	

	EXAM SESSIONS (final exam)
1.	18.01.2023.
2.	08.03.2023.
3.	05.07.2023.
4.	06.09.2023.