



# Pomorski Uniwersytet Medyczny w Szczecinie

Pomeranian University in Szczecin

## SYLLABUS OF CLASSE

### General information

COURSE name: Ophthalmology	
Type of classes	Obligatory
PUM Faculty	Faculty of Medicine and Dentistry
Field of study	Medical
Specialty	not applicable
Level of study	uniform master's
Form of studies	stationary
Year of study/semester of study	Year 4, semesters I and II
The number of assigned ECTS credits	4
Forms of conducting classes (number of hours)	E - lectures 4 / Seminars 16 hours / Classes 36 hours ( $\Sigma$ 56)
Methods of verification and assessment of learning outcomes	- passing with a grade: <input type="checkbox"/> descriptive <input type="checkbox"/> test <input type="checkbox"/> practical <input checked="" type="checkbox"/> oral passing without a grade  - final exam: <input type="checkbox"/> descriptive <input type="checkbox"/> test <input type="checkbox"/> practical <input checked="" type="checkbox"/> oral
Clinic Manager	I Department and Clinic of Ophthalmology Prof. dr hab. n. med. Anna Machalińska 2nd Department and Clinic of Ophthalmology Prof. dr hab. n. med. Wojciech Lubiński
Teaching assistant or person responsible for the subject	dr n.hab. med. Monika Modrzejewska, prof. PUM . oko@pum.edu.pl, Tel. 91 / 466 1293
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Unit Website	<a href="https://www.pum.edu.pl/uniwersytet/dydaktyka_i_leczenie/kliniki_katedry_zaklady_i_pracownie/wmis/">https://www.pum.edu.pl/uniwersytet/dydaktyka_i_leczenie/kliniki_katedry_zaklady_i_pracownie/wmis/</a> I Dep. and Clinic of Ophthalmology <a href="https://www.pum.edu.pl/uniwersytet/dydaktyka_i_leczenie/kliniki_katedry_zaklady_i_pracownie/wmis/">_katedra_i_klinika_okulistyki</a> <a href="https://www.pum.edu.pl/uniwersytet/dydaktyka_i_leczenie/kliniki_katedry_zaklady_i_pracownie/wmis/">https://www.pum.edu.pl/uniwersytet/dydaktyka_i_leczenie/kliniki_katedry_zaklady_i_pracownie/wmis/</a> II Dep. And Clinic of Ophthalmology
The language of teaching	English

**\*zaznaczyć odpowiednio, zmieniając  na X**

### Detailed information

Objectives of the classes		Acquisition of the ability to conduct a full ophthalmological examination and to diagnose and treat the most common eye diseases, including the diagnosis of sudden vision loss, as well as the management of eye injuries. Knowledge of the impact of systemic diseases on the organ of vision and indications for performing and initial assessment of selected additional tests, as well as the principles of prevention and treatment of diseases that are the most common cause of vision deterioration (including surgical, laser and conservative) with rehabilitation in the case of visually impaired people.
Prerequisites in the field	knowledge	General knowledge of the anatomy and physiology of the eye and the intraocular nervous system, basic knowledge of general diseases as above
	Skills	The student is able to conduct a full medical interview.
	social competence	Knowledge of medical ethics. The ability to establish contact and conduct a conversation with patients of all ages, especially in relation to the elderly and disabled, observing the principles of good manners and respecting and caring for the well-being of the patient.

<b>LEARNING OUTCOMES</b>			
<b>no. learning effect</b>	<b>A student who has passed a CLASS knows/can/can:</b>	<b>SYMBOL (reference to) learning outcomes for the course</b>	<b>A method of verifying LEARNING effects*</b>
W01	He/She knows the causes, symptoms, principles of diagnosis and therapeutic procedures in relation to the most common diseases requiring surgical intervention, taking into account the distinctiveness of childhood in the field of ophthalmology	F.W1 SYMBOL (reference to) learning outcomes for the course	EU
W02	He/She knows the rules of qualification for basic surgical procedures and invasive diagnostic and therapeutic procedures in the field of ophthalmology	F.W3	EU
W03	He/She knows the rules of perioperative	F.W4	EU

	safety, patient preparation for ophthalmic surgery		
W04	He/ She knows postoperative treatment with analgesic therapy and postoperative monitoring in the field of ophthalmology.	F.W5	EU
W05	He/She knows the indications and principles of intensive therapy in the field of ophthalmology	F.W6	EU
W06	He/She knows the principles of functioning of the integrated state medical rescue system in the field of ophthalmology	F.W8	EU
W07	He/ She knows the issues of modern imaging in ophthalmology, in particular: 1) radiological symptomatology of basic diseases, 2) instrumental methods and imaging techniques used to perform therapeutic procedures, 3) indications, contraindications and preparation of patients for particular types of imaging tests and contraindications to the use of contrast agents.	F.W10	EU
W08	He/ She has knowledge in the field of eye diseases, in particular: 1) knows and explains the causes, symptoms, principles of diagnosis and treatment in the most common ophthalmological diseases, 2) knows the ophthalmic complications of systemic diseases along with their ophthalmic symptomatology and the correct methods of dealing with these cases, 3) concerning surgical procedures in specific eye diseases, 4) knows basic grammar. drugs used in ophthalmology, their side effects and interactions, 5) knows Greek. drugs with ophthalmic complications and contraindications, and explains their mechanism.	F.W11	EU
W09	He/She knows the causes, symptoms, principles of diagnosis and treatment in the case of the most common diseases of the central nervous system in the field of ophthalmology: 1) cerebral edema and its consequences, with particular emphasis on emergencies, 2) other forms of intracranial compression with their consequences, 3) craniocerebral trauma cerebral palsy, 4) vascular defects of the central nervous system, 5) neoplastic tumors of the central	F.W13	EU

	nervous system		
U01	He/She can assist during a typical ophthalmic surgery, he can prepare the operating field and locally anaesthetize the operated area	F.U1	PS
U02	He/She uses basic surgical tools in the field of ophthalmology	F.U2	PS
U03	He/She adheres to the principles of asepsis and antisepsis	F.U3	PS
U04	He/She can treat a simple wound, put on and change a sterile surgical dressing	F.U4	PS
U05	He/She evaluates the result of radiological examination in terms of the most common types of fractures in the orbits and facial skeleton	F.U7	PS
U06	He/She is able to supply external bleeding	F.U9	PS
U07	He/She can monitor the postoperative period based on basic vital signs	F.U12	PS
U08	He/She performs an ophthalmological screening test	F.U19	PS
U09	He/She recognizes ophthalmological conditions requiring immediate specialist assistance and provides initial, qualified assistance in cases of physical and chemical eye injuries	F.U20	PS
K01	He/She is ready to establish and maintain deep and respectful contact with the patient, as well as to show understanding for ideological and cultural differences	K01	O
K02	He/She is ready to be guided by the good of the patient	K02	O
K03	He/She is ready to respect medical confidentiality and patient rights	K03	O
K04	He/She is ready to take actions towards the patient based on ethical principles, with awareness of social conditions and limitations resulting from the disease	K04	O
K05	He/She is ready to draw conclusions from his own measurements or observations	K08	O
K06	He/She is ready to implement the principles	K09	O

	of professional camaraderie and cooperation in a team of specialists, including representatives of other medical professions, also in a multicultural and multinational environment		
K07	He/She is ready to accept responsibility related to decisions in the course of professional activity, including in terms of own and other people's safety	K11	O

### Table of learning outcomes in relation to the form of classes

no. learning effect	Learning outcomes	Form of classes						
		E-Lecture	Seminars	Exercises	Clinical exercises	Simulations	E-learning	Other forms
W01	F.W1	X	X					
W02	F.W3	X	X					
W03	F.W4	X	X					
W04	F.W5	X	X					
W05	F.W6	X	X					
W06	F.W8	X	X					
W07	F.W10	X	X					
W08	F.W11	X	X					
W09	F.W13	X	X					
U01	F.U1			X	X			
U02	F.U2			X	X			
U03	F.U3			X	X			
U04	F.U4			X	X			
U05	F.U7			X	X			
U06	F.U9			X	X			
U07	F.U12			X	X			
U08	F.U19			X	X			
U09	F.U20			X	X			
K01	K1			X	X			
K02	K2			X	X			
K03	K3			X	X			
K04	K4			X	X			
K05	K8			X	X			
K06	K9			X	X			
K07	K11			X	X			

### PROGRAM CONTENT TABLE

No. of program content	Program content	number of hours	Reference to CLASSES learning outcomes
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<b>Winter/Summer semester</b>			
<b>REMOTE LECTURES:</b>		$\Sigma$ 4	
TK01	Eyeball orbit (including injuries). Cancers	2	F.W1; F.W3; F.W8; F.W10; F.W11; F.W13;
TK02	Eye physiology. Accommodation. Optics. Refractive errors.	2	F.W1; F.W11;
<b>Winter/Summer semester SEMINARS:</b>		$\Sigma$ 16	
TK03	S: Cataract and glaucoma - diagnosis and conservative treatment. Ocular symptoms in systemic diseases -part II	2	F.W1; F.W3; F.W8; F.W10; F.W11;
TK04	S: Cataract and glaucoma - surgical treatment. Vitrectomy (PPV).	2	F.W1; F.W3; F.W3; F.W4; F.W5; F.W6; F.W8; F.W10; F.W11;
TK05	S: Electrophysiological studies in ophthalmology, including congenital diseases of the retina.	2	F.W11; F.W13
TK06	S: Pediatric ophthalmology. Retinopathy of Prematurity (ROP).	2	F.W1; F.W3; F.W8; F.W10; F.W11; F.W13
TK07	S: Squint. Neuroophthalmology.	2	F.W1; F.W3; F.W8; F.W10; F.W11; F.W13
TK08	S: Eyelid. Conjunctiva. Sclera. Cornea. Injuries to the anterior segment of the eye.	2	F.W1; F.W3; F.W4; F.W5; F.W6; F.W8; F.W10; F.W11;
TK09	S: Eye symptoms in systemic diseases - part I	2	F.W1; F.W8; F.W10; F.W11
TK10	S: Acquired retinal diseases (including injuries)	2	F.W1; F.W3; F.W6; F.W10; F.W11
<b>EXERCISES:</b>		$\Sigma$ 36	
TK01	Exercise: Review of anatomy. History of eye diseases and comorbidities. Examination and evaluation of eyeball structures. Evaluation of the protective structures of the eyeball. Orbital physical examination. Studies of the positioning and mobility of eyeballs. Exophthalmometer. The reflex of following the light. Examination of pupillary reflexes to light, convergence and accommodation. Slit lamp examination of the anterior segment - assessment of individual structures of the eyeball in the slit lamp.	5	F.U3; F.U19; F.U20; K.4; K5; K.11
TK02	C.: Examination of intraocular pressure - examination techniques. Orientation, kinetic and computer static perimetry examination. Evaluation of the surface and morphology of	4	F.U3; F.U19; F.U20; K1; K2; K3; K4; K8; K9; K11

	the cornea. Assessment of endothelial cell morphology. Evaluation of the anterior chamber and the angle of filtration - OCT and UBM methods. Pachymetry. Basic ophthalmic drugs used to treat eye diseases and for diagnostic tests.		
TK03	Accommodation - the study of the near and far point of vision. Range of accommodation. Eye refraction test: Donders test, autorefractometer. Prescription and choosing the glasses. Presbyopia. Visual acuity test for distance and near (Snellen charts and ETDRS). Type of strabismus: heterophoria and heterotropia - methods of examination and treatment. Fixation test. Squint angle measurement: viscope, prisms, Maddox cross. Binocular vision testing methods. Diplopia test. Visual localization reflexes (locator).	5	F.U3; F.U19; F.U20; K1; K2; K3; K4; K8; K9; K11
TK04	Operating room. Demonstration of ophthalmic surgery and medical equipment. Operations and minor surgical procedures performed in the case of various diseases of the eyeball - discussion. Preparation of the patient for ophthalmic operations, indications and contraindications for ophthalmic operations. Assessment of the power of intraocular lenses before cataract surgery (computer and ultrasound methods)	4	F.U1; F.U2; F.U3; F.U4; F.U9; F.U12; K1; K2; K3; K4; K8; K9; K11
TK05	Ex.: Practical management of eye injuries. Medical procedures - techniques of turning the eyelids, washing the eyes, instilling medicines, applying ointments. Corneal sensitivity test. Tear secretion test. Lacrimal duct irrigation. Recognition of ophthalmological conditions requiring immediate specialist assistance and initial, qualified assistance in the case of physical and chemical eye injuries. Intermittent eyeball massage. Application of imaging methods in ophthalmology (X-ray, orbital MRI and CNS)	5	F.U3; F.U4; F.U6; F.U9; K1; K2; K3; K4; K8; K9; K11
TK06	Ex.: Techniques of examining the fundus in a straight and inverted image. Practical ability to assess the details of the fundus with a direct ophthalmoscope and its interpretation in the assessment of the optic disc and large vessels (optic disc edema and haemorrhage, no pink reflex). USG A and B ultrasonography - practical application in ophthalmology. Ultrasonography of the anterior segment UBM and Doppler ultrasound in ophthalmology.	4	F.U3; F.U19; F.U20 K1; K2; K3; K4; K8; K9; K11



TK07	Ex.: Lasers in ophthalmology. Fluorescein angiography. Amsler test. OCT and angio-OCT - use in ophthalmology	5	F.U3; F.U12; F.U19; F.U20; K1; K2; K3; K4; K8; K9; K11
TK08	Ex.: Electrophysiology: electrooculography (EOG), electroretinography (flash ERG, PERG), visual evoked potentials (VEP), multifocal techniques - multifocal electroretinogram (mfERG) and multifocal visual evoked potentials (mfVEP).	4	F.U3; F.U19; F.U20; K1; K2; K3; K4; K8; K9; K11

### Recommended literature:

#### Primary literature

1. Ophthalmology an illustrated colour text. Mark Batterbury and Conor Murphy, Elsevier 2019 (obligatory)
2. Ophthalmology. Gerhard K. Lang. 3rd Edition (obligatory), 2016.
3. Kanski 's Clinical Ophthalmology . A systemic approach. Nine Edition , Elsevier 2019.

### Student workload

Form of student workload (participation in classes, activity, preparation of a report, etc.)	Student workload [h]
	In the assessment (opinion) of the teacher
Teacher contact hours	56
Preparation for exercises/seminar	20
Reading the indicated literature	20
Writing a laboratory/exercise report/preparing a project/lecture, etc.	-
Preparation for the colloquium/test	-
Exam preparation	4
Others....	-
Total student workload	100
ECTS credits	4

### Comments

\*Examples of ways to verify learning outcomes:

WE - written exam

OE - oral exam

TE - test exam

PE - practical exam

C - colloquium

P - paper

PST – practical skills test

ERwD – exercise report with discussion of results

E – evaluation of the student's activity and attitude

LR- laboratory report

CS - case study

AA - assessment of the ability to work independently

Q - quiz before the start of classes

MP – multimedia presentation

and other