

Vocational School of Health Services / Opticianry

2023 - 2024 Academic Year

VISUAL OPTICS and REFRACTION

Syllabus

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
VISUAL OPTICS and REFRACTION	OPT2263470	Spring Semester	2+0	2	3
Prerequisites Courses					
Recommended Elective Courses					
Language of Instruction	Turkish				
Course Level	Short Cycle (Associate's Degree)				
Course Type	Required				
Course Coordinator	Lect. Hüseyin DEMİR				
Name of Lecturer(s)	Prof.Dr. Mustafa ELİAÇIK				
Assistant(s)					
Aim	To enable students to comprehend the principles of visual quality, refractive errors and correction.				
Course Content	This course contains; Acquaintance, Course introduction and introduction to visual optics,The Eye as an Optical System: Pupillary response and impact on vision, visual acuity and visual field,Refractory state of the eye (far spot, emmetropia, ametropia), anisometropia, anisoconia and unilateral aphakia, accommodation I,Refractory state of the eye (far spot, emmetropia, ametropia), anisometropia, anisoconia and unilateral aphakia, accommodation II,Refractive defects and definitions,Ametropia Correction: Glasses, contact lenses, intraocular lenses, surgery.,Clinical Refraction: Objective refraction (retinoscopy), subjective refraction techniques, cycloplegic and noncycloplegic refraction I,Clinical Refraction: Objective refraction (retinoscopy), subjective refraction techniques, cycloplegic and noncycloplegic refraction II,Clinical accommodative problems (presbyopia, excess and insufficiency of accommodation,9 accommodative convergence/accommodation ratio, with glasses or contact lenseseffects of correction on accommodation and convergence I,Clinical accommodative problems (presbyopia, excess and insufficiency of accommodation, accommodative convergence/accommodation ratio, glasses or contact lenses)effects of correction on accommodation and convergence II,Multifocal lenses (types, Prentice rule and bifocal design), special lenses, monocular diplopia,Mechanism of Vision, determining the quality of vision, theory of deviation of light, eye harmony, visual field I,Mechanism of Vision, determining the quality of vision, theory of light deviation, eye harmony, visual field II,Correction of Refractive Defects with Laser and Surgical Methods.				
Course Learning Outcomes			Teaching Methods	Assessment Methods	
The aim of this course is to provide the students with an understanding of optical physics and geometry, mastery of human eye optics and anatomy, refractive defects, clinical reflections of these defects and treatment methods of these defects.			16, 9	A	
Teaching Methods	16: Question - Answer Technique, 9: Lecture Method				
Assessment Methods	A: Traditional Written Exam				
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Acquaintance, Course introduction and introduction to visual optics	Pre-Reading			
2	The Eye as an Optical System: Pupillary response and impact on vision, visual acuity and visual field	Pre-Reading			
3	Refractory state of the eye (far spot, emmetropia, ametropia), anisometropia, anisoconia and unilateral aphakia, accommodation I	Pre-Reading			
4	Refractory state of the eye (far spot, emmetropia, ametropia), anisometropia, anisoconia and unilateral aphakia, accommodation II	Pre-Reading			
5	Refractive defects and definitions	Pre-Reading			
6	Ametropia Correction: Glasses, contact lenses, intraocular lenses, surgery.	Pre-Reading			
7	Clinical Refraction: Objective refraction (retinoscopy), subjective refraction techniques, cycloplegic and noncycloplegic refraction I	Pre-Reading			
8	Clinical Refraction: Objective refraction (retinoscopy), subjective refraction techniques, cycloplegic and noncycloplegic refraction II	Pre-Reading			
9	Clinical accommodative problems (presbyopia, excess and insufficiency of accommodation,9 accommodative convergence/accommodation ratio, with glasses or contact lenseseffects of correction on accommodation and convergence I	Pre-Reading			
10	Clinical accommodative problems (presbyopia, excess and insufficiency of accommodation, accommodative convergence/accommodation ratio, glasses or contact lenses)effects of correction on accommodation and convergence II	Pre-Reading			
11	Multifocal lenses (types, Prentice rule and bifocal design), special lenses, monocular diplopia	Pre-Reading			
12	Mechanism of Vision, determining the quality of vision, theory of deviation of light, eye harmony, visual field I	Pre-Reading			
13	Mechanism of Vision, determining the quality of vision, theory of light deviation, eye harmony, visual field II	Pre-Reading			
14	Correction of Refractive Defects with Laser and Surgical Methods	Pre-Reading			
Evaluation Methods		Weight(%)			
Midterm Exam		40			
General Exam		60			
Resources					
Özer, A., "Vision Optics and Refraction Course Book", Istanbul, 2005.					