

**Vocational School of Health Services / Opticianry**

**2024 - 2025 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
<b>Prerequisites Courses</b>					
<b>Recommended Elective Courses</b>					
<b>Language of Instruction</b>	Turkish				
<b>Course Level</b>	Short Cycle (Associate's Degree)				
<b>Course Type</b>	Required				
<b>Course Coordinator</b>	Lect. Hüseyin DEMİR				
<b>Name of Lecturer(s)</b>	Assist.Prof. Uğur YAYLA				
<b>Assistant(s)</b>					
<b>Aim</b>	To enable students to comprehend the principles of visual quality, refractive errors and correction.				
<b>Course Content</b>	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.				
<b>Course Learning Outcomes</b>			<b>Teaching Methods</b>	<b>Assessment Methods</b>	
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	
<b>Teaching Methods</b>	16: Question - Answer Technique, 9: Lecture Method				
<b>Assessment Methods</b>	A: Traditional Written Exam				
<b>Lecture Schedule</b>					
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			
<b>Evaluation Methods</b>		<b>Weight(%)</b>			
Midterm Exam		40			
General Exam		60			

Resources	
Özer, A., "Vision Optics and Refraction Course Book", Istanbul, 2005.	