Level: Undergraduate Vocational Studies in Optometry

Course title: Spectacle optics and technique

Status: obligatory

ECTS: 7

Requirements: Geometrical optics

Learning objectives

To gain knowledge related to spectacle optics and techniques.

Learning outcomes

Upon completion of the course, students should possess:

- General abilities: Technique understanding and competent use.
- Subject specific abilities: Understanding of optical aids and their manufacturing and appliance; Knowing and understanding of physical and optical characteristics of lenses and prisms, multifocal lenses, physical characteristics and biocompatibilities of materials for spectacle frames. Understanding of spectacle magnification and optical tolerances and physical requirements for lens and frame materials. Understanding and knowing of spectacle applying. To advise. To deliver most acceptable form of spectacles. To measure and verify optical aids. To manipulate with the lens with the purpose of prismatic effect control.

Syllabus

Theoretical instruction

Basics of a spectacle lenses. Spherical lenses. Astigmatic lenses. Prisms and prismatic effects. Lens materials. Principles of lens manufacturing. Lens power measurements. Spectacle lens aberrations. Best forms of spectacle lenses. Aspherical spectacle lenses. Bifocal lenses. Trifocal lenses. Varifocal lenses. Painted spectacle lenses. Treated spectacle lenses. Spectacle frames - types and materials. Specifications and nomenclature of spectacle components. Centring, edging and lens mounting. Optical tolerances and requirements for lenses and frame materials. Biocompatibility of materials. Inspection of finished spectacles.

Practical instruction

Practical exercises based on the theoretical part.

Weekly teaching load				Other: -
Lectures: 4	Exercises: 1	Other forms of teaching: 2	Student research: -	