

Introduction to Vision Sciences

Department responsible: Medicine

Status: Compulsory

Member of staff responsible: Prof. Miltiadis Tsilimbaris

Lecture hours: 50 (25 x 2)

Coursework: None

ECTS: 10

Syllabus:

- Eye biology basics
- External eye and orbit (anatomy, histology, physiology, pathophysiology)
- Ciliary muscle (anatomy, histology, physiology, pathophysiology)
- Crystalline Lens (anatomy, histology, physiology, pathophysiology)
- Retina (anatomy, histology, physiology, pathophysiology)
- Ocular muscles – Strabismus
- Ocular diseases (an overview)
- Visual accommodation (Physiology; Presbyopia; Restoring accommodation)
- Laser-tissue interaction
- Tissue healing
- Refractive surgery techniques (LASIK, PRK)
- The Photoreceptor mosaic – Retinal circuitry
- Primary visual pathways,
- Visual Perception (Spatial vision; Colour Vision; Motion; Binocular Vision-stereopsis; Texture segregation; The Gaze system)
- Colour Vision (Cone types; Physiology of visual pathways; CIE table; Colour Vision Anomalies; Clinical tests)
- Higher order visual processing – the visual brain
- Ageing and Vision
- Animal eye models,
- Optical models of the human eye

At the completion of this course the student expected to be familiar with the basic vocabulary and meanings of ophthalmic and visual sciences. He/she is also expected to possess basic knowledge of anatomy and physiology of the eye and the visual system along with understanding of the basic pathophysiology of major ophthalmic diseases.