

Ophthalmic Optics, Contact Lenses and Visual Perception: an optometric approach

22 webinars (44 hrs in total) - assessment method: online multiple-choice questions.
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Instructors: Prof Miltiadis Tsilimbaris⁺, Sophia Panagopoulou PhD^{**}, Aris Pallikaris PhD^{*}

Course presentations

1. Human visual perception and natural selection
2. The optical structures and the aberrations of the eyes: from single to human eyes^{*}
3. Emmetropisation and myopia progression: a refractive error or a disease?
4. Accommodative function: “errors” in focus, fluctuations and dynamics
5. Gaze, eye movements and fixation
6. Wavelengths, colour perception and colour anomaly
7. Binocular vision: summation vs. rivalry
8. Evaluating visual performance: visual acuity, contrast sensitivity and beyond threshold
9. Ageing of the human eye: optics vs. perception
10. Presbyopia: why does it come so early in our life?
11. Correcting presbyopia: progressive power lenses

12. Contact lenses in 2020: where are we heading?
13. Optics of contact lenses: what should we know?
14. Corneal topography: normal vs. irregular cornea^{**}
15. Correcting astigmatism with contact lenses: soft vs RGP
16. Fitting a presbyope with contact lenses: multifocals vs. monovision
17. Myopia control and its clinical importance: orthokeratology vs. extended DOF CLs
18. Fitting the irregular cornea with contact lenses: corneal vs. semi-scleral / scleral

19. Correcting refractive error and presbyopia with surgical techniques^{**}
20. Ocular disease: acquired vs. inherited pathologies⁺
21. Low vision patients: how to improve their visual experience
22. Visual electrodiagnosis in retinal and post-retinal disease

Course outline

It is evident that the quality of clinical service provided by an eye care practitioner is a function of his/her clinical skills and the provision of state-of-the-art instrumentation facilities and ophthalmic products. The pace of technological and scientific development is much faster today than it was 50 years ago. In the past, when an innovative idea was proposed by a scientist or clinician it was usually followed by a lengthy period of development before any direct application was attempted. This relatively long transitional period allowed widespread discussion of the idea before any practical application was attempted, so that any outcome could be smoothly integrated into clinical practice. In contrast, today's academic and commercial pressures frequently force premature publication and exploitation

of new ideas, methods and therapeutic interventions. Thus, the eye care practitioner, and especially the optometrist, should be equipped with basic knowledge about visual function and functional vision and have full understanding of cutting-edge technology to diagnose, evaluate and manage any refractive condition and decide on the interventions needed to optimise / rehabilitate visual performance.

This course offers a range of basic and advanced knowledge on ophthalmic optics, contact lenses and new technologies for evaluating and correcting visual performance that can bridge the gap between scientific interpretations and patients' needs, satisfaction and complaints, offering to the eye care practitioner an ongoing search for improved methods of diagnosis and rehabilitation.

Sotiris Plainis' biography



Sotiris completed his undergraduate education in Optics and Optometry in Greece and UK. These were followed by postgraduate studies, at the Department of Optometry and Vision Sciences, UMIST, UK, led to MSc (1995) and PhD (1999) degrees, and innovative postdoctoral research (1999-2001). Since then he has been employed as a Principal Research Scientist at the Laboratory of Optics and Vision (LOV), University of Crete, being a faculty member of two postgraduate courses (“Optics and Vision”, “Brain and Mind”) and having an active research group in visual psychophysics and electrophysiology, mainly investigating functional visual performance.

He has been appointed as Honorary Lecturer at the University of Manchester (2007-2015) and Visiting Research Fellow at Aston University, UK (since 2017). He forms a Faculty member of the Basic Optics course organized by the European Society of Cataract and Refractive Surgery (ESCRS) and a past member of the Education Committee of the European Academy of Optometry and Optics (EAOO). He is a fellow of the British Contact Lens Association (BCLA) and a member of the International Society for Contact Lens Research (ISCLR). Since 2015 he forms an International Vision Impairment (VI) Classifier, IPC. He has published widely in his field in peer-reviewed Journals (56), edited a book (“Presbyopia: origins, effects and treatment”, SLACK Incorporated) and is a reviewer of Postgraduate Scholarships of the British College of Optometry. He is the manager of Optical House clinical practice in Heraklion, Crete and contact-lenses.gr.