



UNIVERSITI TEKNOLOGI MARA

OPT427: VISUAL OPTICS

Course Name (English)	VISUAL OPTICS APPROVED
Course Code	OPT427
MQF Credit	4
Course Description	Visual optic is the study of light in relation to vision and is taken here, in the main, to mean a study of geometrical and physiological optics applied to optometry. This course describes a detailed schematic eye models, dioptric of the eye including ocular optics principle from various aspects including refractive state of the eye, eye model, ametropia, retinal image, accommodation, presbyopia, astigmatism, anisometropia, aniseikonia and aphakia as well as entoptic phenomenon.
Teaching Methodologies	Lectures, Blended Learning, Tutorial, Presentation
CLO	CLO1 Explain the principle of optics in the eye, concept of paraxial equation and also can solve the visual optic calculation. CLO2 Explain and differentiate all the refractive error and principle among the human. CLO3 Explain the principle and know how to record optometry parameter. CLO4 Explain the quality of optics and application on human eyes.
Pre-Requisite Courses	No course recommendations
Topics	
1. Schematic eye 1.1) n/a	
2. Dioptric of the eye 2.1) n/a	
3. Emmetropia and ametropia, Ametropia 1, 2 and 3 3.1) n/a	
4. Visual Acuity 4.1) n/a	
5. Anisometropia and Aniseikonia 5.1) n/a	
6. Retinal image size, spectacle magnification and relative spectacle mag 6.1) n/a	
7. Accommodation 7.1) n/a	
8. Empty field and night myopia 8.1) n/a	
9. Monochromatic aberration 9.1) n/a	
10. Chromatic aberration 10.1) n/a	
11. Aphakia and pseudophakia 11.1) n/a	
12. Entoptic phenomena 12.1) n/a	
13. Test 13.1) n/a	

14. Presentation

14.1) n/a

15. Final Examination

15.1) n/a

Assessment Breakdown	%
Continuous Assessment	40.00%
Final Assessment	60.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Discussion	Tutorial and forum (blended learning via i-learn)	10%	CLO1 , CLO2 , CLO3 , CLO4
	Presentation	n/a	15%	CLO1 , CLO2 , CLO3 , CLO4
	Test	n/a	15%	CLO1 , CLO2 , CLO3 , CLO4

Reading List	Recommended Text	<ul style="list-style-type: none"> Rabbetts, A.G. & Rabbetts R.B. 2007, <i>Bennett & Rabbetts's clinical visual optics</i>, Oxford : Butterworth-Heinemann
	Reference Book Resources	<ul style="list-style-type: none"> Benjamin W.J. 2006, <i>Borishs Clinical Refraction</i>, 2 Ed., Butterworth-Heinemann: Boston. Keating M.P. 2001, <i>Geometrical, physical and visual optics</i>, Butterworth-Heinemann: Boston. Decusatis C., Enoch J. & Bass M. 2009, <i>Handbook of Optics vol. I: Geometrical & Phys</i>, 3 Ed., McGraw-Hill. Tunnacliffe, A.H. 1997, <i>Introduction to visual optics</i>, 4 Ed., London : Association of British Dispensing Op Michaels, D.D. 1980, <i>Visual optics & refraction</i>, 2 Ed., St. Louis: CV Mosby
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	