

Module Details	
Module Title:	Refraction and Refractive Error
Module Code:	OPT4002-B
Academic Year:	2019-20
Credit Rating:	20
School:	School of Optometry and Vision Science
Subject Area:	Optometry
FHEQ Level:	FHEQ Level 4
Pre-requisites:	
Co-requisites:	

Contact Hours	
Type	Hours
Lectures	48
Laboratory	48
Directed Study	104

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Academic Year (Sept - May)

Module Aims
To provide students with a fundamental understanding of the principles underlying refraction and associated visual assessment. To develop an understanding of the effect of ametropia on unaided vision and to understand how this interacts with patient age and accommodation. To develop the ability to apply basic practical skills in refraction and visual assessment.

Outline Syllabus
Lectures: Introduction & Spherical ametropia. Retinoscopy. Astigmatism. Retinoscopy on a patient. Distance visual acuity measurements. Subjective monocular refraction: best vision sphere. Interpupillary distance. Jackson crossed-cylinder. Fan and Block. Clinical Accommodation. Auto refractors. Measuring single vision lens power (e.g. focimetry).

Development of refractive errors. Introduction to the Cover Test. Refractive Surgeries.

Practical Clinical Sessions: Lab orientation. Model eye retinoscopy. Retinoscopy, visual acuity and mean sphere subjective. Interpupillary distance. Retinoscopy, visual acuity, mean sphere and Jackson cross-cyl. Retinoscopy, visual acuity, mean sphere and Fan & Block. Accommodation. Putting it all together.

The clinical portfolio is a completed portfolio of evidence of clinical experience and skills, to include practical examinations in retinoscopy and subjective refraction, logbook completion/submission, eye clinic attendance and reflection in semesters 1 and 2, model-eye work. Although this element does not contribute to the final mark for this module, this element must be passed.

Learning Outcomes

1	Apply the relevant basic visual optics underpinning ametropia, retinoscopy and subjective refraction.
2	Describe the clinical information gained from retinoscopy.
3	Describe the clinical information gained from visual acuity and subjective refraction.
4	Work together in small teams or with a partner.
5	Follow a plan of action to meet set targets.

Learning, Teaching and Assessment Strategy

The module is based on a lecture series and practical clinical sessions.

1. The fundamental principles relating to the correction of refractive error are covered at a basic level in formal lectures.
2. Clinical classes in Retinoscopy, Subjective Refraction and the measurement of Visual Acuity allow students to start to develop these skills at the earliest opportunity.
3. Students work in pairs in the clinical sessions. The pairs change during each clinical session to enable each student to work with other members of the group. This is to aid communication skills and to allow students to experience some of the variation encountered in examining human eyes.

Mode of Assessment

Type	Method	Description	Length	Weighting
Summative	Examination - closed book	Closed book exam in the January exam period (paper-based)	1 hour	%
Summative	Examination - closed book	Closed book examination (inc MCQ) at the end of the module (paper-based)	2 hours	100%
Summative	Coursework	Clinical Portfolio of evidence of clinical	0 hours	%

		experience & skills (cont. under 'Outline Syllabus') - PASS/FAIL		
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Reading List

To access the reading list for this module, please visit <https://bradford.rl.talis.com/index.html>.

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.