

Course Information Sheet

BOptom (Hons) Optometry

Mode and course length – Full-Time (4 years)

Location – ARU Cambridge Campus

Awarding Body – Anglia Ruskin University. As a registered Higher Education provider Anglia Ruskin University is regulated by the Office for Students.

Overview

Get the skills you need to register as an optometrist. You'll be working alongside our lecturers, who are registered optometrists providing a vital service to the public in our campus eye clinic. Our course is accredited by the General Optical Council.

Only a third of your teaching time will be spent in lectures. The rest of your learning will be hands on, divided between practical demonstrations, clinical and lab sessions, and our eye clinic. You'll also visit local hospital clinics to gain practical experience – plus, there's the chance to get work experience in the community, spending time with charities like Cam Sight .

Our eye clinic has everything you'll need to practise your optometry skills, including 15 fully equipped testing and research rooms. You'll use specialist equipment such as slitlamps, keratometers and optical coherence tomographers. And you'll have access to facilities for assessing and supporting visually impaired people and testing visual stress and colour perception.

All our staff are trained or registered as optometrists or dispensing opticians, so you'll be kept up to-date with what's going on in the professional world. You'll also have guest lectures from ophthalmologists, orthoptists and optometrists working in laser eye clinics and their own practices.

Course Delivery

Our courses are delivered through teaching and learning methods which provide students with the widest possible exposure to a modern and innovative higher education experience.

These methods vary and could include attendance at lectures and seminars, undertaking laboratory exercises or work-based activities, practical work, performances, presentations, field trips, other relevant visits and e-learning through Canvas, our online learning management system.

Each course is divided into a number of 'modules' which focus on particular areas, each of which has a specific approach to its delivery. This information is published to students for each module they take via the Module Definition Form (MDF) and Canvas.

Assessment

Throughout the course, we'll use a range of assessment to measure your progress. Because our course is so practical, a lot of your assessment will be practical, too – including exams and clinical competence. You'll also do written exams, problem-solving exercises, essays, presentations and data analysis.

Fees

Information about your course fee including any annual fee increases or deposits (if required) can be found in your offer letter.

Additional Costs

PD ruler - £20

pen torch - £10

Occluder - £14

Budgie stick - £10

Retinoscope & Ophthalmoscope - £1385

Lab coat - £15.

Travel expenses for 14hrs of hospital experience: Approx. £100

Disclosure and Barring Service (DBS) – Enhanced check £44

Printing costs (optional) – Average: £2.50-£5.00 per teaching week.

Modules

Core Modules

Year 1: Foundation in Optometry, Medical and Life Sciences

This module will provide students with the necessary skills to begin studying at level 4 in courses related to Optometry, Medical Science and Life Sciences.

Students will be introduced to the core skills necessary to succeed in higher education, including thinking critically, researching and referencing appropriately, demonstrating appropriate numeracy and ICT skills, and communicating effectively verbally and in writing.

In addition to these fundamental study skills, Students will be given an introduction to the various scientific disciplines underpinning the life sciences. Fundamental mathematical skills will be covered in order to support students' other subjects and give them confidence in manipulating data.

Students will be introduced to molecular and cellular biology, and how these fields are applied to real-world investigations. Students will also study the biology of micro and macro organisms, with reference to both human and animal structures.

Students will be introduced to the core concepts of chemistry, with a particular focus on organic chemistry, and will also be given a grounding in the core principles of physics, applied to living organisms.

The module is made up of the following 8 constituent elements:

- Interactive Learning Skills and Communication (ILSC)
- Information Communication Technology (ICT)
- Critical Thinking
- Maths for Scientists
- Cellular Biology
- Biology – Physiology
- Chemistry
- Physics for Life Sciences

Year 2: Human Anatomy and Physiology for Optometrists

This module introduces the students to functional anatomy and physiology in man. A knowledge base and appropriate terminology to study human anatomy and physiology at a macroscopic, microscopic and biochemical level is provided. Throughout the module, the concepts of homeostasis, set points and feedback mechanisms is discussed, the perturbations of which underlie dysfunction and disease. A brief overview of cell biology (covered in more detail in Foundations of Cell Biology) is followed by an introduction to histology, which emphasises the importance of tissue design in relation to its role. The anatomy and physiology of the following organs and systems are then discussed in detail: the brain, nervous system and the special senses, the heart and cardiovascular physiology, the respiratory system and the lymphatic and immune systems. There will also be an introduction to haematology. The module has a large component of practical work, which reinforces the concepts

discussed in the lectures. Both anatomy- and physiology-based practicals are carried out, which develop practical skills in class. The module introduces concepts that have a strong medical bias, focussing on the maintenance of health.

Year 2: Ocular Anatomy and Biochemistry

The module describes the detailed functional anatomy of the eye and neuro-optometry, to provide an understanding of the integration of ocular structure and function. It includes preliminary studies of the effects of disruption of the normal system by intrinsic and extrinsic factors and anatomical changes occurring in ocular pathology. These topics will be built on throughout the course in the study of ocular disease and abnormality.

The module also introduces the basic principles of biochemistry, with specific references to structural and functional relationships of molecules and macromolecules to include carbohydrates, lipids, amino acids, proteins, nucleic acid, the control of gene expression and metabolism. The delivery of the module will be in the form of lectures

Year 2: Geometrical, Physical and Visual Optics

This module is compulsory for students on the BOptom (Hons) Optometry course and is restricted to students of this course. It provides the student with an understanding of the optical principles of optical systems, lenses and the eye and forms the basis of many aspects of clinical optometry and vision science. After a study of the wave theory of light, optical techniques such as ray-tracing methods are introduced and these methods are applied to the study of image formation. General optical principles, such as refraction, are extended to the elementary areas of ophthalmic optics such the nature of ametropia and its correction. This is followed by the study of more advanced subjects including the theory of chromatic and monochromatic aberrations and their impact on retinal image quality. The theory and optometric applications of topics in wave optics is also examined. The module is delivered over two trimesters and combines lectures and laboratory sessions in which students are able to investigate various optical phenomena and observe the effects of ametropia on visual performance.

Year 2: Theoretical and Practical Ophthalmic Lenses

This module is compulsory for students on the BOptom (Hons) Optometry pathway and is restricted to students of this pathway. The aim of this module is to provide the student with an understanding of the principles of spectacle lenses and frames, so as to be able to dispense appropriate spectacles to their patients. The principles of refraction are introduced with respect to single vision lenses, and developed to include lens thickness, astigmatism, prisms and measurement of lens power, followed by more detailed analysis of lens aberrations and lens design, treated and tinted lenses, and multifocal lenses (bifocal and progressive power lenses). Frame materials and measurements, as well as legal aspects and standards for dispensing spectacles are also covered. The module is delivered over two trimesters by a combination of lectures, practicals and tutorials.

Year 2: Clinical Optometry 1 - Introduction to Practice

This is the first of a series of clinical modules, in which, students will learn the applications of basic clinical optometric techniques in the assessment of a patient's visual status. The module is also the key to understanding the development of effective communication between practitioner and patient as well as helping to develop skills to encourage effective team building. Apart from attending lectures, students will attend workshops and clinical sessions where they will put into practice what they have learned during the lectures. This will be an ideal setting to develop their communication and clinical skills as they will be supervised by optometrists who can help out with expert advice on how best to master certain clinical techniques and communication skills

Year 3: Introduction to Ocular Disease

This module builds on the knowledge gained in year one in functional anatomy and physiology and ocular anatomy. It adds to the knowledge gained commensurately in year two of pathological processes relevant to optometrists and of the principles of pharmacology, to introduce the concept of diseases and abnormalities of the eye. An introduction to clinical presentation and the optometric and medical management of such diseases and abnormalities will be given.

Year 3: Clinical Optometry 3 - Introduction to Professional Practice

This module introduces the student to the various types of contact lenses and to the procedures used to assess their suitability. The use of solutions used in conjunction with contact lenses. The module teaches students how to conduct an eye examination, how to interpret clinical finding and how to dispense appropriate optical aids by carrying out eye examinations on volunteer

patients. The learning experience is based on formal lectures, practical classes and patient examinations.

Year 3: Monocular, Binocular and Paediatric Vision

This module consists of a series of lectures, supported by practical sessions and/or seminars, designed to provide students with i) a basic scientific foundation to the study of human vision and perception and ii) a basic clinical foundation to the study of paediatric optometry and binocular vision. The progression is from studying the scientific foundations of monocular and binocular vision to the study of the basic clinical principles of paediatric optometry and binocular vision, including normal and abnormal binocular vision conditions, their diagnosis and correction, and the optometric examination of children. First, the student will study a broad range of topics with the aim of stimulating an understanding of the physical, physiological and psychological aspects involved in the study of Vision Science. The primary emphasis will be on studying the normal visual system, however some emphasis will be placed on the understanding of developing vision and anomalous visual conditions e.g. amblyopia. The module will cover aspects of visual psychophysics, neurophysiology and neuro-imaging as tools used in the study of Vision Science. Topics covered will include spatial vision, temporal vision, binocular vision and stereopsis, colour vision, eye movements, motion perception, perceptual constancies and illusions. Then, the student will study the basic principles of paediatric optometry and binocular vision, based on a thorough understanding of the principles of functional anatomy and optics of the visual system. It develops the theme of abnormalities of binocular vision, their diagnosis and correction. It covers the optometric examination of children. The laboratory and/or seminar sessions will provide time for students to participate actively in learning particular skills, or in carrying out particular tasks, which will support their learning of theoretical or clinical concepts.

Year 3: Pharmacology and Pathology

This module builds on the knowledge gained in year one in functional anatomy and physiology and ocular anatomy to give students an understanding of pathological processes relevant to optometrists. The module introduces the student to the principles of pharmacology, based on an understanding of the functional anatomy and physiology of the body, in general, and the eye, in particular. Students are also introduced to important ocular manifestations of systemic disease. The principles of therapeutic drug use in the treatment of ocular emergencies and disorders of the eye provide a key focus to the programme. The learning experience is based on formal lectures, student-led presentations, tutorials and practical sessions.

Year 3: Clinical Optometry 2 - Skills for Optometric Practice

This module covers the theory and practice of optometric instrumentation and investigative techniques whilst continuing to develop refraction skills. Students will learn the techniques and demonstrate effective ability in the use of optometric instrumentation. The module also teaches students how to conduct an eye examination and how to interpret clinical findings. More advanced optometric investigative techniques are introduced later in the module. Students will learn how to communicate their findings to patients and other eye care or medical professionals. The learning experience is based on formal lectures, practical classes and tutorials.

Year 4: Clinical Optometry 4 - Advanced Optometric Practice

The aim of this module is to build on the foundations of optometric practice covered in Years 1 and 2 of the course in order to develop the knowledge and application of knowledge in the detection and management of ocular disease. This module will extend the knowledge of ocular disease acquired in Clinical Optometry 3. Students will learn how to interpret the presenting symptoms and signs of patients attending with ocular disease and how to manage such patients. Management of patients with ocular disease will be considered further with the study of low vision. The module will cover causes of visual impairment, procedures for testing and assessment of patients, evaluation of remaining visual function and consideration of the full range of optical and non-optical visual aids and services available. Students will learn the basic principles of epidemiology and the application of acquired knowledge to the process of decision-making. The module will also address the sources of and strategies for dealing with errors and uncertainties in clinical decision-making.

Year 4: Undergraduate Major Project

The individual Major Project module allows students to learn about ethical issues in conducting research and to engage in a substantial piece of individual research and / or experimental work, focussed on a topic relevant to their specific discipline. It also provides an opportunity for the student to reflect on their past achievements during their University studies and otherwise, and to plan for future academic and / or professional development. The Project topic may be drawn from a variety of sources including: Anglia Ruskin research groups, previous / current work experience, an Anglia Ruskin lecturer suggested topic or a

professional subject of their specific interest (if suitable supervision is available). The project topic will be assessed for suitability to ensure sufficient academic challenge and satisfactory supervision by an academic member of staff, who will then supervise the topic. The chosen topic will require the student to identify / formulate problems and issues, conduct literature reviews, evaluate experimentally gathered data as appropriate, and critically appraise and present their findings using a variety of media. Regular meetings with the project supervisor should take place, so that the project is closely monitored and steered in the right direction. For the blended-learning delivery method this will occur via video-valling and pre-arranged phone calls, supplementing meetings that will occur during residential visits. It will be acceptable either to complete online ethical training and write a dissertation on a topic studied in depth or to perform an ethically approved experimental project and write it up accordingly. Students will also receive individual and / or small group guidance from their supervisor in constructing a curriculum vitae, summarising personal achievement; and a personal Exit Action Plan, incorporating career planning. This work will be reviewed by the supervisor and advice given for improvement. The module is provided via face-to-face (face-to-face teaching and meetings) or blended learning approach (which includes formal lectures, webinars, group-based exercises and self-directed study). In the latter approach face-to-face meetings will occur during residentials, supplemented by pre-arranged phone conversations and video-calls. Course documents will be made available via Canvas.

Year 4: Clinical Optometry 5 - Professional Practice

This module is compulsory for students on the B.Optom (Hons) Optometry course and is restricted to students of this course. The module develops the concept of contact lens design and application in a more complex context than in level 5 of the course and examines their use in a variety of optical situations, as well as the consequences of long term wear. Third year Optometry students will spend up to 6 hours per week in the Optometry Clinic performing eye examinations and contact lens appointments on patients. The students will dispense the patients with appropriate spectacles where required.

Year 4: Optometry, Society and the Environment

This module considers the place of the optometric profession in society. This is achieved by examining the laws and ethical codes pertaining to optometry, and considering their effects on optometric services and patients. Students will study the relationship between Acts of Parliament, Statutory Instruments and professional guidelines, and examine the influence of Parliament, the General Optical Council and the College of Optometrists on optometric practice. The module includes a study of basic ethical theory which will enable students to resolve ethical dilemmas and evaluate existing professional guidance. Students will also examine the importance of vision in society by considering the impact of vision on common social and workplace activities such as driving and computer usage. This will include the effects on vision of lighting and radiation along with other environmental factors and hazards.