Anglia Ruskin University

Course Information Sheet

BSc (Hons) Ophthalmic Dispensing

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

Working with children and adults to improve their vision is a stimulating and rewarding career. Our course teaches the skills you need to become a dispensing optician, working alongside optometrists. You'll learn how to dispense, fit and supply spectacles, and how to run a successful practice.

Studying in a small group, you'll cover the anatomy of the eye and how vision and lenses work. You'll learn how to assess and manage low vision, and about eye exams. You'll explore how to manage a practice, enhancing your communication skills and professional conduct.

As you progress your learning will become more practically based and you'll gain hands-on experience. We'll encourage you to find work experience in your second year which can then be carried over into your third year where your work experience,Throughout the course you'll use industry-standard equipment in our dedicated dispensing laboratory and eye clinic

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 variety of methods to assess your progress. Besides practical, written and multiple-choice exams, we'll use assignments, logbooks, lab reports, formal reports, case studies, presentations and class-based tests.

Fees

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

Additional Costs

Disclosure and Barring Service (DBS) Enhanced check - £44 Facial gauge - £60

PD ruler - £20

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: Geometrical Optics

A module designed to introduce the student to the concepts of ophthalmic optics along with the basic principles of geometrical optics and ophthalmic lenses. The students will learn about the relationship between how light travels through differing media and therefore how basic ophthalmic lenses are used to correct vision. The module will look at the laws of reflection and refraction and how these apply to ophthalmic lenses. The module is recognised by the Association of British Dispensing Opticians and successful completion of this module will gain the student exemption from the part one theoretical examinations which will go towards the professional qualification. The sessions will comprise of a mixture of formal lectures, to introduce subject areas, and written exercises to evaluate the effects of changing parameters on the passage of light through different mediums and through different situations as is relevant to ophthalmic optics. Diffraction, refraction and reflection will play a fundamental role in the module and the theories of light travel expressed by Huygen and Snell, along with the fundamental paraxial equations will be explored, both in a theoretical and practical aspect. The student will be encouraged to consider the consequences of additive and subtractive colour mixing, methods of determining the velocity of light, the effect of prismatic elements on the path a ray of light will take. A brief flirt with photometry and the science of light intensity measurement will round of the teaching pattern. Students will be expected to explore the effects of refractive index and chromatic aberration and the effects that this will have on the day to day experiences of the spectacle wearer.

Year 2: Study Skills for Dispensing Opticians

The importance of developing regular working habits for efficient and effective learning will be emphasised and encouraged and the setting of short weekly exercises will be a key component in helping the student to acquire the skills, disciplines and rewards of undergraduate academic life. This module will enable the student to gain transferable academic skills that will assist with the transition in to professional practice

The module will introduce the student to look at examples of good and bad practice with respect to academic performance and academic honesty with a view to prevent reoccurrence of negative experiences and bolster the positive experiences of

assessment and development.

The student will start on the journey of professional and collegiate working in a manner that will be carried forward to practice management modules throughout the course.

Students will be expected to carry out tasks in a self-learning manner to encourage independent learning. The student will study the methods ofsourcing material and journals pertinent to referencing in a formal report understanding the link between the theoretical and practical methods of being a dispensing optician applying for positions within the optometric profession by understanding the links that underpin professional practice with the core competencies applying the core competencies within the course and future practice applying the professional body pre-qualification portfolio applying the professional body preliminary qualification requirements improving literacy skills

Year 2: Introduction to Ophthalmic Dispensing with Mathematics

This module consists of a series of lectures, exercises and practical demonstrations designed to introduce the student to the theoretical and practical principles of ophthalmic dispensing. The student is required to carry out a series of practical exercises for formative assessment in preparation for the professional body's Preliminary Qualifying examination. The module will consider modern ophthalmic dispensing in UK ophthalmic/optometric practice. The content reinforces both ophthalmic lens and optics theory studied elsewhere and provides a foundation to the more advanced practical aspects of ophthalmic dispensing. The student is introduced to the concept of product knowledge and problem solving within a clinical setting. The module includes material of descriptive, practical and to a lesser extent, mathematical nature. The subjects covered include spectacle frame components and measurements, the description of spectacle frame materials, and facial measurements. It also includes neutralisation of spectacle lenses, lens laying off, lens description, use of the lens measure and basic prescription analysis. The knowledge and skills gained from this module will support, assist and provide the student with the fundamental practical aspects of ophthalmic dispensing to be used within their workplace. Mathematical skills required in later studies dealing with the theory of ophthalmic lenses and how light passes into the eye are developed, concentrating on algebra, geometry and trigonometry. The re-arrangement of formulae, simultaneous and quadratic equations and the use of a non-programmable calculator are studied together with other numeracy skills underpinning GCSE level skills.

Year 2: Optics of the Eye

A module designed to introduce the student to the human eye and its components This module will give a base level of understanding of the eye and how it works, in preparation for second year modules, and to assist in relating the spectacle refraction to the eye and its structure. Basic Visual Optics principles will be explained and relationships between geometric optics and visual optics will be explored. The student will be encouraged to engage in class based experiments and seminar-type sessions where the eye is explored in relation to how as dispensing opticians the vision can be monitored, corrected, and how advice can be given to patients in a real case scenario. The student will explore ways of explaining to the lay person the relevance of ocular conditions and how the vision will or will not be effected by these conditions. Basic causes of myopia, hypermetropia, astigmatism and presbyopia will be explored. Basic understandings of the common ocular conditions and diseases will be sought in a formal lecture with further reading being necessary for the full and meaningful understanding of the topic. The module is designed to give the student the basic anatomical and visual optical structure of the eye and adnexa so that they can successfully discuss with a patient the ocular condition and the causes of visual abnormalities. It is designed to allow the student to communicate in an effective manner in a real patient scenario.

Year 2: Introduction to Ophthalmic Lenses

A module designed to introduce the student to the concepts of mathematical ophthalmic lens parameters along with the basic principles of ophthalmic lenses. The students will learn about the relationship between how light travels through differing media and therefore how basic ophthalmic lenses are used to correct vision. The module will look at the laws of reflection and refraction and how these apply to ophthalmic lenses. The effects of changing a lens parameter from a mechanical and an optical consideration along with the effect that the patent will perceive will be investigated. Calculations on lens thicknesses, specific gravity, abbe values, reflections and curve variation factors to build up a comprehensive knowledge of lenses. There will also be an introduction to the tints, filters and coatings that are available to the modern dispenser The module will investigate the basic techniques involved in deciphering prescriptions and clinical decision making with regard to lens choice and advice that is given to patients. The module looks at the parameters of lenses and how altering the parameters affect the overall performance and effect of the changes on the patient and the patients' vision. This will take the form of workshops and seminars. The module is

recognised by the Association of British Dispensing Opticians and successful completion of this module will gain the student exemption from the part one theoretical examinations which will go towards the professional qualification.

Year 2: Introduction to Practice Management with Communication Skills

This module is designed to start the student thinking about the future and the roles that the student may find themselves in once a qualified registered eye care professional. It will investigate the structure of an optometric practice along with the support that the professional can expect to receive from the various professional bodies (e.g. ABDO) and the regulatory body (GOC). It will look at the basis of working in a safe environment and the ways and means of controlling and monitoring this environment to ensure that there is sufficient safety for staff, colleagues and patients/customers. The module is designed to be one where the students are expected to bring their own experiences to the debates into what constitutes a good practice. Looking at examples of good and bad practice will form discussion forums in the seminars and exploration of how to prevent reoccurrence of negative experiences and bolster the positive experiences will be investigated. Visits from the ABDO and the GOC will take place to introduce the student to the professional and legal issues surrounding practice management and interactions between staff and patients. The running of an optometric practice is complex and the module is designed to start the student down the road of discovery into the running of the practice.

Communication is the key to a successful practice and this module is designed to introduce the student to the techniques of using good, effective and disciplined communications to effect a smooth running operation. Verbal and non-verbal communications will be developed, looking at body language and facial expressions as well as gestures, as clues to meaning.

Discussions and seminars will be held on controlling a conversation, and calming down the irate patient. The student will learn how to take accurate case history from patients with various ophthalmic problems and pathological conditions, and how to deal effectively with patients concerns and complaints by extracting the relevant information from a patient as to what is the problem actually is. Patients often have irrational fears of blindness, and this module will aim to arm the student with techniques to calm fears and anxieties that are inappropriate. Use of the effective question in getting the right answer, and separating fact from fiction in order to achieve effective communication techniques will be explored which will help students know how to talk to patients in a calm professional detached manner Learning the importance of listening to a patients' concerns, and understanding how far the practitioner patient relationship can go is also important and the module will look at techniques in managing this tricky relationship. Discussions on how to deal with the patient that requires information regarding systemic diseases and the potential ocular impacts, its treatment and possible ocular side effects on the prescription will be studied. Discussions in finding the professional approach to the complainant by separating a complaint against the practice from a complaint against the individual, and identifying ways and means of how not to take things personally. How to react to the complaints either justified or otherwise, and how to best resolve the problems will be explored.

Year 3: Further Ophthalmic Lenses

This module builds upon the basic principles of ophthalmic lenses previously studied in Introduction to Ophthalmic Lenses. Discussions begin with focussing on thick lens theory and the impact a "real" lens has on the path a ray will take, magnification and surface powers. The determination of prismatic effects and decentration for astigmatic single vision lenses, with oblique axes, and bifocal lenses follows. Details including identification fitting and designing of all single vision and multifocal lens types are discussed. The tinting of spectacle lenses is expanded upon from earlier modules and includes methods of tinting, tinted lens types and the clinical application of tints and filters. Eye protection in industry and sport is discussed with emphasis placed upon lens types, use, characteristics and availability. The topics studied in this module will provide the student with a higher level knowledge and understanding of ophthalmic lenses and will allow them to apply theoretical principles to practical situations and to dispense complex prescriptions and special types of optical appliances within the workplace environment The topics contained within this module include those required by the Association of British Dispensing Opticians for exemption from the theoretical examination in Ophthalmic Lenses. It also covers elements on the General Optical Council's core competency number 4, optical appliances.

Year 3: Human and Ocular Anatomy

This module is designed for the full time honours student. It is delivered by f2f delivery. The content of the module is constructed to provide a general and yet comprehensive knowledge of the principles of human anatomy and physiology. The module also examines the histology and gross structure of the human eye with an emphasis on the relationship between each structure and its function. This provides a basis for understanding the functional anatomy of the eye and visual physiology, as required by a

dispensing optician.

Year 3: Communication Skills in the Optical Sector

Communication is the key to a successful practice and this module is designed to introduce the student to the techniques of using good, effective and disciplined communications to effect a smooth running operation. Verbal and non verbal communications will be developed, looking at body language and facial expressions as well as gestures, as clues to meaning. Discussions and seminars will be held on controlling a conversation, and calming down the irate patient. The student will learn how to take accurate case history from patients with various ophthalmic problems and pathological conditions, and how to deal effectively with patients concerns and complaints by extracting the relevant information from a patient as to what is the problem actually is. Patients often have irrational fears of blindness, and this module will aim to arm the student with techniques to calm fears and anxieties that are inappropriate. Use of the effective question in getting the right answer, and separating fact from fiction in order to achieve effective communication techniques will be explored which will help students know how to talk to patients in a calm professional detached manner Learning the importance of listening to a patients' concerns, and understanding how far the practitioner patient relationship can go is also important and the module will look at techniques in managing this tricky relationship. Discussions on how to deal with the patient that requires information regarding systemic diseases and the potential ocular impacts, its treatment and possible ocular side effects on the prescription will be studied. Discussions in finding the professional approach to the complainant by separating a complaint against the practice from a complaint against the individual, and identifying ways and means of how not to take things personally. How to react to the complaints either justified or otherwise, and how to best resolve the problems will be explored.

Year 3: Refractive Management and Methods of Ocular Examination

The content of the module is constructed to provide students with the knowledge of the optical principles of the human eye and methods of ocular examination. The module begins with a discussion of various 'optical models' that have been proposed to define emmetropia, ametropia and astigmatism. The formation of the retinal image is discussed along with the practical applications of spectacle magnification. The module also introduces the components of a routine eye examination, including both objective and subjective methods of assessment. The effect of age on the human eye is discussed along with an overview of the detection and correction of presbyopia. This module also covers the principles and applications of ophthalmic instruments, the basis of visual perception and binocular vision. These are essential for effective communication to both the optometrist and the patient in an accurate and authoritative manner. The module is delivered over two trimesters in lecture, laboratory and tutorial sessions.

Year 3: Introduction to Contact Lens Practice

This module covers the development & legal aspects of contact lens fitting with a special regard to dispensing opticians. The assessment of a patient's suitability for contact lens wear and the fitting of soft, rigid and scleral lenses are also outlined. Emphasis is given to the on-going aftercare of the contact lens wearer & the complications which contact lens wear may induce. The module introduces the students to instrumentation used in contact lens practice, the information that it yields during the initial assessment and during the subsequent after care visits. Modalities of lens wear will be considered, along with the use of contact lens solutions, stains, and the role of topical pharmaceutical ophthalmic drugs. Satisfactory performance in this module will be required to gain registration as a Dispensing Optician, and addresses core competency Number 5, outlined by the General Optical Council and provides exemption from the ABDO contact lens theory exam. Successful completion of this module will leave the student in a strong position to consider undertaking their final professional examination in this field.

Year 3: Low Vision Management and Assessment

This module looks at the incidence and causes of low vision and their effects on vision. The term 'low vision' is defined clinically and legally together with other related terms. Methods of assessment of the visual function are studied including the use of various testing charts for distance and near, and the effects of illumination, contrast and glare. The significance of the current refraction and methods of verification are explained. The significance of visual field loss is examined and the effects of pathological conditions on the visual field. The estimation and assessment of magnification values for all distances, and the supply of suitable optical and/or non-optical monocular and binocular appliances are discussed The module develops an understanding of the need for multi- and inter-disciplinary approaches to the management and psychology of low vision, including arrangements for after-care and the engagement of social services, support groups, specialist trainers and teachers.

Year 4: Advanced Ophthalmic Lenses

This module is designed to take the students to the next step in spectacle lens design and spectacle lens technology. The candidate will gain an understanding of and be familiar with the design, materials and optical principles of spectacles lenses. They will be able to dispense spectacles, instruct patients in their safe and efficient use, monitor progress with the appliance and assist patients to achieve maximum visual performance. The student will be able to advise patients on occupational, sporting and protective ophthalmic appliances and to dispense the appropriate appliance to the required standards. In particular the student will study the components of lens design that are new to the profession or are likely to be developed in the future. This module will also include a great deal of input from spectacle lens manufacturers who will hold formal and informal sessions with students as the latest technology is rolled out. Students will look at the concept of the modern day dispensing methods and compare them with the methods previously used to assess what the next step would be if technology progresses in the same manner. The student will reflect on the impact of computerised systems for determining the best lens forms and compare manual methods with the computerised versions of these systems The student will explore the concepts of recreational occupational and vocational dispensing along with the necessity of the modern optometric practice to be conversant in the needs of the amateur sports enthusiast and look at the options available in an informed and professional manner. The spectacle lens design will be explored and new innovations will be sought in the light of probable problems offered by the lecturing staff.

Year 4: Final Practical Dispensing

It is the final module in a series of three dispensing modules designed to prepare the students for working in practice and the real patient experience. It is a very practical based module and attendance is therefore essential for successful completion of the module. The skills and techniques needed to successfully problem solve for the patient with fitting and/or visual problems from a pair of spectacles will be developed. The paediatric and the geriatric patient will be discussed and methods of dealing with each will be explored in detail, along with the legal and ethical aspects of registrants when dealing with vulnerable patients (It will be a requirement that an up to date CRB certificate is held). Specific practical expertise will be sought in the repair and adjustments of spectacle frames, frame and facial measurements and the consequences of errors, and the solutions to such errors in practice. This will be for the norm and for the facial abnormality. Further study in the appropriate lens type for prescription in real scenarios will be undertaken, with special regard to fields of view, tinted and protective lenses, and multifocal lenses for standard use occupational use and distinguishing between the need for progressive and regressive additions. The different types of bifocal and trifocal lenses will be investigated with a view to fitting the most appropriate lens to a prescription. Specialist lenses such as polarised, recumbent and Fresnel lenses will be discussed and identified. Experience will be gained in such matters as problem solving, identifying needs and matching solutions to all areas of practical dispensing. The supply and recommendation for high powered prescription lenses will be studied at length, taking into account the fitting and maintenance of frames and vertex distances. Use of mechanical techniques in lens designs and options other than indices for best performance. PEPs and the legislation of PEPs will be covered in great detail along with full EN standards and consequences of failing to comply with them. Further work on the Focimeter will be done in lab time, with specific attention on duplication of prescription and working to tolerances. The following patient types, the requirements, potential clinical problems and considerations : - The myopic patient - The hypermetropic patient - The presbyopic patient - The aphakic patient - The BV abnormality patient - The low vision patient - Patients with eye protection needs - Patients with pathological ocular conditions - Patients with special needs

Year 4: Practice Management and Ocular Pathology

A module designed to prepare the students for working in practice and the real patient experience along with staff management. Health and safety along with ethical procedures will be explored. Whereas other practical modules have been concerned with the development of the technical issues of dispensing spectacles to a patient, this looks at the social, environmental, ethical and financial aspects of dispensing Recruitment and staff management staff progression and practice structure will be explored along with legal and ethical aspects of practice management and small business principles. Professional conduct and aspects of good practice along with GOC disciplinary methods and procedures will be discussed and practice management best practice established. Patient handling and liaison techniques will be identified, discussed and explored. Discussions workshops and syndicated group seminars will cover aspects of dispensing such as the ability to manage a patients care in a safe, ethical and confidential environment, along with the ability to keep clear accurate and contemporaneous patients records The General Optical Council Fitness to Practice committee will visit and explain the basis of the investigation process and the possible outcomes of investigations and the penalties that would be appropriate for different situations. This module will also explore abnormal ocular conditions and associated pathologies in accordance with the duties of the dispensing opticians under the standards of practice (4/2016) and the core competencies (2011).

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: Vocational, Recreational and Paediatric Dispensing

This module will address the applied aspects of ophthalmic dispensing in the working and general environment. In order for the student to gain a clear understanding of this, the topics covered are illumination, building regulations, visual ergonomics, optometric aspects of providing occupational health care, ocular hazards in the work place and during recreation, combined with an understanding of the risks of ocular injuries in the workplace and the appropriate emergency procedures that an optometrist would be expected to take during an ocular emergency. Vision standards for road transport drivers, plus specialist needs pertaining to aviation, maritime services and the military services. Additionally the module addresses the legal and ethical requirements of the ophthalmic dispenser within a business framework. The student will be informed of the legislation that pertains to their professional practice combined with the skills and competencies needed to run a successful business providing contemporary eye care services to the public. The module will also address visual and safety needs of the professional and recreational sportsman.

This module will also cover the fine details of paediatric dispensing from the very small infant showing an ability to communicate effectively with the child and their carer. The module will give the candidate an understanding of paediatric refractive prescribing and management decisions. At the end of the module the candidate is expected to demonstrate:

- The ability to advise on and measure for the most appropriate paediatric frames
- The ability to advise and measure for the most appropriate lens choice