

# Examination Information Pack

## Refraction Certificate

Dear Colleague

Thank you for your enquiry concerning the College's Refraction Certificate Examination.

I enclose copies of the current:

- Registration Information
- Admission Procedure
- Guidance for Candidates with Additional Needs
- Candidate code of conduct
- Policy on Allegations of Cheating in Examinations
- Appeals procedure
- Language Requirements
- Preparing for Examinations
- Examination Timetable
- Examination Structure
- Standard Setting
- Examination Syllabus

Candidates must hold a medical qualification approved by the General Medical Council of the United Kingdom or of Ireland for the purpose of registration.

Please note candidates who are yet to enter the Part 1 FRCOphth examination are required to submit an attested copy of their medical degree in evidence of their eligibility to sit this examination. Medical degree certificates may be attested by a Fellow or Member of *this* College, the British Council or your embassy, a solicitor or the university issuing the certificate. Candidates who are registered with the General Medical Council (GMC) are not required to submit an attested copy of their medical degree but should include their GMC number in the appropriate place on the application form for verification and candidates with the Irish Medical Council (IMC) should do the same with their IMC number.

No previous experience in ophthalmology will be necessary for candidates to sit the Refraction Certificate but trainees in Ophthalmic Specialist Training are required to pass this examination before they enter into the **fourth** year of specialist training. Please note that from 1 August 2013, candidates are permitted a maximum of six attempts in which to pass this examination. Examination attempts prior to August 2013 do not count towards the number of attempts available.

Candidates are unlikely to pass this assessment if they have not undertaken a large number of clinical refractions in the clinical settings of either the hospital workplace or in optometric establishments.

The above information has been agreed by the Council of The Royal College of Ophthalmologists. I would add that this information is subject to variation at the discretion of the Council.

Dylan Costello  
**Head of the Examinations Department**

## **REGISTRATION INFORMATION**

Candidates wishing to confirm the eligibility of their medical degree for the purpose of registration with the General Medical Council may do so by the following means:

You can access the World Directory of Medical Schools at the below link:

<https://search.wdoms.org/>

Candidates who have yet to enter the Part 1 FRCOphth examination are required to submit an attested copy of their medical degree or details of their GMC registration in evidence of their eligibility to sit this examination.

## Regulations

The following notes on the regulations concerning applications for admission to the examinations are published for the guidance of candidates:

1. Completed applications for admission to an examination must reach the Examinations Department **no later than 5.00pm on the closing date**, namely approximately **ten weeks** before the exam is held. It is not possible to accept applications received after the closing date.
2. The applications must be accompanied by the fee and such certification as is required by the regulations. If you cannot supply all the relevant certification you must contact the Examinations Department or supply a covering letter as to the reasons why. All outstanding certification must be sent within seven days after the closing date, if not before, otherwise the candidate will be withdrawn from the examination and forfeit their examination fee. Applications submitted without the required fee will not be accepted.
3. Upon receipt of application the Examinations Department will send all candidates a written receipt. Detailed instructions including written and clinical examination dates will be dispatched to all candidates within ten days after the closing date for receipt of applications.
4. Applicants wishing to withdraw their entry for an examination must notify the Examinations Department in writing by 5.00pm on the closing date for receipt of applications. Fees cannot be refunded after this time.
5. Applicants must apply for entry visas for the United Kingdom in good time prior to the date of the examination. In exceptional circumstances, if written evidence of the refusal of a visa is provided, the Examinations Committee will consider requests for candidates to withdraw their examination entry, subject to the receipt of a 20% administration charge.
6. Candidates unable to attend an examination will forfeit their examination fee. In exceptional circumstances, the Examinations Committee will consider requests to withdraw a candidate's entry from the examination sitting subject to receipt of written supplementary evidence (e.g. a detailed medical certificate, a death certificate for a close family member) and subject to a 20% administration charge. **Please note that lack of preparation is not considered a suitable reason to withdraw from an examination.**
7. All candidates will receive feedback regarding their individual performance in the examinations.
8. Results are posted by First Class Mail with the Pass List being displayed on the College Website. Results are only released upon approval of the Senior Examiner. We regret that examination results are not available by telephone or email.

## Practical Examination Procedures

1. Unless notified, candidates are **not permitted** to use calculators in any section of the examinations.
2. Candidates are only allowed to bring their own clinical equipment into the examination in a clear plastic pencil case or plastic bag.
3. Candidates are forbidden to communicate in any way with, seek assistance from, give assistance to, or interfere with the work of other candidates or the invigilators in the examination room or elsewhere during the period of the examination, or indulge in any other form of unfair practice.
4. The Senior Invigilator has the power to expel a candidate from the examination.
5. Candidates are advised to read the Code of Conduct for candidates and applicants, and Policy on Allegations of Cheating and Misconduct in Examinations.
6. Candidates are not allowed to use mobile phones or other electronic equipment including smart watches. All devices **must be switched off and must not be kept on the candidate's person**. Clear instructions will be given to candidates regarding the timing of the examination.
7. Photographic identification (such as a passport or photographic driver's licence) will be checked before candidates are admitted to the examination.
8. For clinical examinations, candidates are required to present themselves in good time and are required to wear name badges throughout the examination period (these will be supplied by the Royal College of Ophthalmologists). The start of the examination cannot be delayed for candidates arriving late.
9. For clinical exams candidates must be appropriately dressed and should follow the Department of Health 'Bare Below the Elbows' guidelines.
10. No books, written material (including passports) or electronic equipment may be consulted during the examination and are not permitted on a candidate's person.
11. Candidates are **not allowed** to use scrap paper, all notes **must be** written on the answer sheet and crossed through as appropriate.
12. Candidates are advised that **no extra time** will be given to complete their mark sheets once the end of the OSCE station has been signalled.

## Eligibility

A medically qualified candidate will be eligible to sit the examination provided that he/she:

- a) holds a medical qualification approved by the General Medical Council for the purpose of registration

Candidates who have yet to enter the Part 1 FRCOphth examination are required to submit proof of their primary medical qualification. Candidates who are registered with the General Medical Council (GMC) should include their GMC number in the appropriate place on the application form for verification and candidates with the Irish Medical Council (IMC) should do the same with their IMC number. All other candidates are required to submit an attested copy of their medical degree in evidence of their eligibility to sit this examination. Medical degree certificates may be attested by a Fellow or Member of *this* College, the British Council or your embassy, a solicitor or the university issuing the certificate.

## Condition of the Examination

No previous experience in ophthalmology will be necessary for candidates to sit the Refraction Certificate but candidates are unlikely to pass this assessment if they have not undertaken a large number of clinical refractions in the clinical settings of either the hospital workplace or in optometric establishments. Feedback from successful candidates indicates that between 50 and 100 full refractions were completed in preparation for the examination.

Candidates in OST will be required to pass this examination before they enter into the **fourth** year of ophthalmic specialist training.

An examination can be taken before the candidate enters the relevant GMC-approved training programme or when they are on a break in the programme.

The pass will be considered current as long as the candidate enters or re-enters the programme within seven years of passing the examination and satisfies any other currency requirements.

A pass in an examination taken after completing a run-through or higher training programme will not be acceptable for a certificate of completion of training. In that situation, doctors may be able to demonstrate equivalence via the CESR or CEGPR process.

## Exemption

Candidates who have been registered with the General Optical Council as an optometrist in the last five years are exempt from this certificate. Candidates intending to apply for exemption should therefore ensure that they do so within this period. Candidates in ophthalmic specialist training are advised to apply for exemption before the end of year 3.

In order to apply for exemption from this certificate, candidates must submit details of their GOC registration together with a covering letter to the Head of the Examinations Department formally requesting exemption.

## **Guidance for candidates with Additional Requirements**

The Royal College of Ophthalmologists recognise that there may be some candidates who require additional arrangements when undertaking a Royal College of Ophthalmologists' examination.

All candidates who require additional arrangements must adhere to the guidelines set out below. Candidates must note that upon receipt of sufficient evidence additional arrangements may not necessarily be granted.

In awarding additional arrangements the Royal College of Ophthalmologists seek to:

1. Approve valid arrangements and access to written and clinical examinations.
2. Give special consideration to candidates where specific circumstances have arisen at or near to the examination time which have not previously been highlighted.
3. Ensure that no additional arrangement gives an unfair advantage over another candidate

When submitting their application form all applicants must make it clear if additional arrangements are needed in writing and attach this to the application form. Supplementary evidence will be needed from the candidates such as:

- Doctor's note
- Up to date literacy assessment (candidate must have been aged 18 or over at the time of assessment)
- A Statement of Special Educational Needs
- A relevant diagnostic report regarding the learning disability
- Historical evidence of the disability

### Extra time award:

An additional allowance of up to and including 25% may be awarded to those candidates requesting special consideration for extra time and only on approval of the supplementary evidence.

### Specialist equipment:

The Royal College of Ophthalmologists will consider special request from candidates for specialist equipment such as:

- Additional lighting
- Larger desk to accommodate specialist equipment
- Separate room
- Supervised rest breaks

All additional requirements will be considered by the Chairman of the Examinations Committee.

## **CODE OF CONDUCT FOR EXAMINATION APPLICANTS AND CANDIDATES**

The College's code of conduct can be found on our website, at the following link:

<https://www.rcophth.ac.uk/wp-content/uploads/2014/11/Code-of-Conduct-Examination-candidates-and-applicants-20170404.pdf>

## **ALLEGATIONS OF CHEATING AND MISCONDUCT IN EXAMINATIONS**

Further information regarding the College's Policy on Allegations of Cheating and Misconduct in Examinations can be found on our website, at the following link:

<https://www.rcophth.ac.uk/wp-content/uploads/2018/11/Policy-on-Allegations-of-Cheating-and-Misconduct-20181008.pdf>

## Appeals Procedure

The College's appeal procedure is available online at [www.rcophth.ac.uk/examinations/appeals-procedure/](http://www.rcophth.ac.uk/examinations/appeals-procedure/)

## Language Requirements

All examinations run by the Royal College of Ophthalmologists are conducted in English.

Although candidates are not expected to undertake examinations such as IELTS or PLAB it is expected that candidates should be equivalent to IELTS Level 7.

## Preparing for the examinations

The Royal College of Ophthalmologists recommend that candidates preparing for examinations should:

- Read the appropriate text, syllabi and curriculum for the relevant examination.
- Gain clinical experience in ophthalmology in hospitals this may also include working within other specialties such as Medicine and Pathology.
- Attend courses – A list of courses for examinations can be found on the College website (the College does not run or endorse any of the listed courses: <https://www.rcophth.ac.uk/events-and-courses/non-rcophth-events/>).
- Ensure they are familiar with principles and values of the General Medical Council's Good Medical Practice (<http://www.gmc-uk.org>).

Candidates may also find useful information from the National Advice Centre for Postgraduate Education. (<http://www.nhscareers.nhs.uk/nacpme/>)



**REFRACTION CERTIFICATE EXAMINATION  
TIMETABLE 2018**

**April 2019**

**Opening Date for Receipt of Applications: Mon 17 December 2018**  
**Closing Date for Receipt of Applications: Mon 11 February 2019**

Tues 23 - Fri 26 April 2019                      London

**June 2019**

**Opening Date for Receipt of Applications: Mon 11 February 2019**  
**Closing Date for Receipt of Applications: Mon 08 April 2019**

Wed 05 – 07 June 2019                      Birmingham

**Opening Date for Receipt of Applications: Mon 18 February 2019**  
**Closing Date for Receipt of Applications: Mon 29 April 2019**

Mon 24 – Thurs 27 June 2019              University of Malaysia Sarawak, Kuching, Malaysia\*

**July 2019**

**Opening Date for Receipt of Applications: Mon 04 March 2019**  
**Closing Date for Receipt of Applications: Mon 20 May 2019**

Mon 15 - Thurs 18 July 2019              Glasgow

**December 2019**

**Opening Date for Receipt of Applications: Mon 12 August 2019**  
**Closing Date for Receipt of Applications: Mon 07 October 2019**

Mon 02 - Thurs 18 July 2019              Birmingham

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There will be a limited number of examination spaces available per examination. Should the number of applications exceed the examination spaces available the Examinations Committee have agreed the following criteria will be applied:

- Priority will be awarded, in the first instance, to applicants in years 2-3 of Ophthalmic Specialist Training (OST) OR years 5-6 of Medical Ophthalmology training
- Should additional spaces be available, second priority will then be awarded to candidates who have previously applied but not been allocated a place
- All remaining places will be awarded on a first come first served basis

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\*Candidates should note that a minimum of 15 applications are required for this examination to proceed. A maximum of 40 candidates will be admitted to this examination so early application is advised.

## **Refraction Certificate Examination - Introduction**

Please note that from 1 August 2013, candidates are permitted a maximum of six attempts in which to pass this examination. Examination attempts prior to August 2013 do not count towards the number of attempts available.

An examination can be taken before the candidate enters the relevant GMC-approved training programme or when they are on a break in the programme.

The pass will be considered current as long as the candidate enters or re-enters the programme within seven years of passing the examination and satisfies any other currency requirements.

Candidates who have entered Ophthalmic Specialist Training (OST) must have passed this examination by the end of the third year of run-through training.

The Refraction Certificate Examination is designed to assess the following practical skills from the curriculum for ophthalmic specialty training, which can be viewed in detail at:

<http://curriculum.rcophth.ac.uk/>:

- CA2 **Assess vision**
- CA7 **Perform a cover test and assess ocular motility**
- PM1 **To formulate and agree with the patient a management plan based upon clinical assessment and investigations, with reference to established protocols and guidelines**
- PM14 **To use spectacle lenses and prisms when indicated**
- PS2 **Perform a refractive assessment and provide an optical prescription**
- C1 **Establish a good rapport with patients and relatives**
- C11 **Keep clinical records**
- BCS6 **Optics and Medical Physics**

### **Structure of the Examination**

The examination will consist of an Objective Structured Clinical Examination (OSCE).

Candidates will be examined on 12 OSCE stations in four rooms (see below). Six of these stations are retinoscopy stations during which candidates will examine three patients, performing retinoscopy on each eye. The time allowed will be ten minutes for each double retinoscopy station during which time both eyes must be assessed. Candidates are permitted to divide the ten minute period between the eyes as they wish. After ten minutes there will be a one minute change over period. A five minute OSCE station will then follow. Each station will be timed precisely. A one minute warning will be given before the end of each OSCE (after nine minutes for the double OSCE and after four minutes for the single OSCE).

The fourth room will also start with a double OSCE lasting ten minutes. This will also be an examination on one patient and again the candidate will be allowed to use the time flexibly. The candidate will be required to carry out the sphere refinement of subjective refraction on each eye of a patient followed by a binocular balance/plus one blur back or duochrome test. Following completion of the double OSCE, there will be a one minute change over period, followed by the final, five minute OSCE station. Similarly a one minute warning will be given before the end of each station (after nine minutes for the double OSCE and four minutes for the single OSCE).

The OSCE times will be strictly enforced and no further writing is allowed after the end of the OSCE. Please bear this in mind during your practice.

Candidates will be examined on 12 OSCE stations. Each station will be timed for precise periods of five minutes. Candidates are advised to prepare for all of the listed OSCE stations. One examiner will be present in each station for the duration of the cycle.

### **Summary of OSCE Stations**

The composition of OSCE stations and rooms are as follows:

#### **Room 1**

Station 1: Cycloplegic Retinoscopy 1 – Patient A: First Eye

Station 2: Cycloplegic Retinoscopy 2 – Patient A: Second Eye

Station 3: Subjective Refraction: Cylinder – Patient B: One Eye, as directed by examiner

#### **Room 2**

Station 4: Cycloplegic Retinoscopy 3 – Patient C: First Eye

Station 5: Cycloplegic Retinoscopy 4 – Patient C: Second Eye

Station 6: Lens Neutralisation with or without a focimeter

#### **Room 3**

Station 7: Non-Cycloplegic Retinoscopy 1 – Patient D: First Eye

Station 8: Non-Cycloplegic Retinoscopy 2 – Patient D: Second Eye

Station 9: Visual Acuity and Trial Frame Fitting – Patient E

#### **Room 4**

Station 10: Subjective Refraction: Sphere – Patient F: Both Eyes

Station 11: Subjective Refraction: Binocular Balance – Patient F: Both Eyes

Station 12: Near Addition: Patient G

**Detailed information on the format and conduct of the examination is available in the *Refraction Certificate - Instructions to Candidates* and you are strongly advised to review the *Instructions* prior to submitting your application.**

### **Standard Setting**

All examinations are standard set. The Refraction Certificate OSCE is standard set using the Hofstee method. All questions are reviewed in the light of performance and modified accordingly.

### **Overall Result**

Candidates are required to pass the OSCE. If awarded a fail, candidates must re-sit the entire examination, even if a pass was previously achieved in any station.

### **Results**

Results will be released four weeks after the examination, once verified by the Senior Examiner. Candidates are not permitted to telephone the College for examination results. All results will be sent to candidates by first class post and the pass list will be displayed on the College website.

## Refraction Certificate Syllabus

The Fellowship of the Royal College of Ophthalmologists examinations are designed to assess the knowledge, skills and professional attitudes required of a doctor who wishes to practice as an ophthalmologist in the United Kingdom. A pass in the Part 1 FRCOphth, Refraction Certificate and Part 2 FRCOphth examinations represents a high level of achievement. The FRCOphth is a necessary but insufficient requirement for the Certificate of Completion for Training in Ophthalmology.

The three examinations that comprise the FRCOphth are based upon the curriculum for ophthalmic specialist training and candidates are **strongly advised to become familiar with the curriculum** (available at: <http://curriculum.rcophth.ac.uk/>).

**The Refraction Certificate** assesses understanding of clinical refraction of a patient especially with respect to retinoscopy. It also assesses the understanding of the instruments related to clinical refraction. Candidates are unlikely to pass this assessment if they have not undertaken a large number of clinical refractions in the clinical settings of either the hospital workplace or in optometric establishments. The specific learning outcomes from the RCOphth Ophthalmic Specialist Training curriculum that the examination assesses are:

### BCS6 - [Optics](#)

**Understand and apply knowledge of optics, ultrasound and electromagnetic wavelengths relevant to ophthalmic practice.**

**Acquire a basic understanding of medical physics.**

**Use this knowledge when interpreting clinical symptoms, signs and investigations and in the practice of ophthalmic medicine and surgery.**

#### CLINICAL OPTICS

Optics of the eye: Transmittance of light by the optic media, schematic and reduced eye, Stiles-Crawford effect, visual acuity, contrast sensitivity, catoptric images, emmetropia, accommodation, Purkinje shift, pinhole.

Ametropia: Myopia, hypermetropia, astigmatism, anisometropia, aniseikonia, aphakia

Accommodative problems: Insufficiency, excess, AC/A ratio

Refractive errors: Prevalence, inheritance, changes with age, surgically induced

Correction of ametropia: Spectacle lenses, contact lenses, intraocular lenses, principles of refractive surgery

Problems of spectacles in aphakia: Effect of spectacles and contact lens correction on accommodation and convergence, effective power of lenses, back vertex distance, spectacle magnification, calculation of intraocular lens power, presbyopia

Low vision aids: High reading addition, magnifying lenses, telescopic aids - Galilean telescope

### BCS14 - [Instrument technology](#)

**Understand and apply knowledge of instrument technology relevant to ophthalmic practice.**

**Be aware of the limitations of technology and the risks involved in their use.**

**Maintain an understanding of new developments in relevant technologies.**

This assessment will specifically test competence in the following instruments:

Visual acuity measurement charts (near and distance)

Duochrome test

Retinoscope

Focimeter / lensmeter

Keratometer

Stereo tests

Jackson Cross-cylinder

Maddox Rod

Maddox Wing

Prism bar

Auto refractor

Colour vision tests

## **PS2 - [Perform a refractive assessment and provide an optical prescription](#)**

**Assess a patient's refractive error.**

**Assess a patient's spectacle lenses using neutralisation techniques and focimetry.**

**Perform retinoscopy and an accurate subjective refraction, and provide an appropriate prescription.**

**Assess a patient's binocular co-operation and advise on whether this should be corrected optically.**

**Perform an accurate cycloplegic refraction (especially on a child) and provide an appropriate prescription.**

## **CLINICAL REFRACTION**

Retinoscopy

Subjective refraction

Measurement of BVD

Muscle balance tests

Accommodative power

Measurement of IPD

Decentration of lenses and prismatic effect

Best form lens

Prescribing multifocal lenses

Prescribing for children

Cycloplegic refraction

In addition the following learning outcomes are also assessed:

### **CA1- [Take a directed clinical history](#)**

**Conduct full consultations appropriate for the clinical problem and patient's needs.**

**Take clinical histories, guide patients through appropriate examinations, give information about their problems and involve them in their management decisions as appropriate.**

### **CA2 – [Assess vision](#)**

**Measure and record visual acuity for near and distance using an appropriate method and interpret the results.**

**Measure colour vision using an appropriate method and interpret the results.**

**Know the principles of assessing contrast sensitivity.**

Assess vision in children and adults who have language and other barriers to communication. Interpret and apply newer methods of assessing vision when they are introduced into clinical practice.

Assess vision in circumstances outside the eye clinic environment.

**CA7 – [Perform a cover test and assess ocular motility](#)**

Perform a cover test, assess ocular movements and interpret the findings. This includes the prism cover test.

Accurately recognise and describe nystagmus where present.

**PM14 – [To use spectacle lenses and prisms when indicated](#)**

Identify when a patient may benefit from the use of spectacle lenses and prisms.

Assess the type and strength of lens or prism and provide an appropriate prescription.

Liaise with and, where indicated, seek advice from optometrists and orthoptists.

Advise a patient on the purpose, duration and optical effects of the prescription.

**PS21 – [Perform the correct hand hygiene technique](#)**

Reduce the risk of cross infection by adopting the correct technique of hand cleaning and maintaining hand hygiene.

Understand and apply local and national hand hygiene policies.

**C1 - [Establish a good rapport with patients and relatives](#)**

Establish a trusting relationship with a patient, their carers and relatives.

Recognise when there could be problems with establishing rapport and make attempts to mitigate possible effects on the clinical relationship.

**C2 - [Communicate effectively and sensitively with patients, relatives and carers, particularly with regard to active listening, questioning and conclusion](#)**

Communicate effectively and sensitively with patients, relatives and carers in a variety of situations.

Ensure patients receive the information they require, including during local anaesthetic surgery.

Demonstrate active listening throughout consultations.

Explain matters in terms understood by a lay person.

Be sensitive during questioning.

Be able to draw a consultation to a satisfactory conclusion.

**C12 - [Write and dictate clearly and effectively](#)**

Communicate through effective clear writing and dictation

As with all examinations, the final learning outcome is also relevant and will be assessed in the Refraction Certificate.

**AER 16 – [Able to manage time effectively and deal with stress](#)**

**Carry out responsibilities in a timely manner, prioritising urgent and important tasks.**

**Recognise stress in yourself and others.**

**Develop your resilience by adapting to stress and adversity.**