FRCSI (Ophth) regulations and guidance notes

This is the final examination in the training pathway of Higher Specialist Trainees in Ireland.

Eligibility to take the examination
This examination is exclusive to higher specialist trainees in Ireland. To be eligible to sit the FRCSI examination you must hold MRCSI (Ophth) and be in year 4 or 5 of HST.

Examination content and standard
The examination syllabus, as detailed below, is identical to that of the Part 2 written and Part 2 clinical examinations. The candidate will need to demonstrate that he/she is competent to practice independently as a general ophthalmic surgeon by possessing the requisite knowledge, clinical skills, communication skills, clinical reasoning ability and professional values. The standard expected will be that of a general ophthalmic surgeon without a specific subspecialty interest.

Examination format
The examination will take the form of a one-hour viva examination with set questions that cover the breadth of clinical ophthalmology and ophthalmic surgery. A minimum of three examiners will conduct the examination. The examiners will take turns asking the questions and recording the answers. The expected answers to the set questions will be approved by the FRCSI (Ophth) examinations committee.

Recommendations
It is most effective to prepare for the FRCSI through experience-based learning, regular reading of the literature and up to date textbooks, and attendance at post-graduate training courses and meetings over the entire duration of higher specialist training. It is recommended that higher specialist trainees aim to achieve the required standard to pass this examination at the end of each subspecialty attachment in the areas covered during that subspecialty attachment. Therefore continually preparing for this examination throughout HST cannot be recommended highly enough.

Overall result
Candidates will receive a pass or a fail in this examination.

Limit on attempts
There are no limits to the number of attempts at the FRCSI examination.

Timing and venue
The examination will be once or held twice annually, depending on the number of candidates approaching completion of HST training, at the Royal Victoria Eye and Ear Hospital, Adelaide Road, Dublin or at the Royal College of Surgeons in Ireland, 123 St Stephen's Green, Dublin 2. Further details will be posted under postgraduate examination calendar on the RCSI website.
Examination Policies
Available on http://www.rcsi.ie/postgraduate_exams_policies

NOTE: These Regulations are under continual review. It is recommended that candidates review the RCSI website to ensure that they have the most up-to-date information. Any changes will be announced on the website.

May 6th 2017
Syllabus

Main subjects:
Generic competencies and professionalism
Clinical history taking and examination in ophthalmology
Investigations in ophthalmology
Principles of ophthalmic surgery
Clinical optics
Clinical ophthalmology
  Cornea & external diseases
  Cataract & Refractive surgery
  Oculoplastics, lacrimal and orbital disease
  Glaucoma
  Medical Retinal disease
  Vitreoretinal surgery
  Uveitis
  Ocular oncology
  Neuroophthalmology
  Paediatric Ophthalmology & Strabismus
  General medicine relevant to ophthalmology
Ophthalmic pathology

Generic competencies and professionalism
Professional standards, ethics and good medical practice
Principles of clinical governance
Clinical audit and patient safety
Communication skills:
  Breaking bad news
  Dealing with distressed patients and/or relatives
  Dealing with complaints
  Communicating with colleagues
Visual impairment
  International definitions
  Psychological and social implications for the patient
  Available support resources
Driving and occupational regulations related to visual impairment in Ireland/ United Kingdom
Principles of evidence based medicine
Basic epidemiology and clinical research techniques

Clinical history taking and examination in ophthalmology
Candidates must demonstrate competence in clinical assessment in all areas of ophthalmology and relevant medical specialties.

Investigations in ophthalmology
Keratometry
Corneal topography
Pachymetry
Optical coherence tomography of anterior segment
Specular microscopy
Confocal microscopy
Wavefront analysis
Microbiological investigations
  Diagnostic corneal scrape
  Conjunctival swabs
  Intra-ocular samples; vitreous biopsy, anterior chamber tap
Schirmer’s test
Retinal photography
Optical coherence tomography of posterior segment
Fluorescein angiography
Indocyanine green angiography
Scanning laser ophthalmoscopy
Scanning laser polarimetry
A and B scans
Ultrasound biomicroscopy
Doppler ultrasound
Dacryocystography
Plain skull and chest X ray
CT thorax
Orbital and neuro-CT scans
Orbital and neuro-MRI scans
Neuro-angiography
Electroretinography
Electrooculography
Visually evoked potentials
Humphrey and other automated perimeters
Goldmann perimetry
Hess charts
DEXA scans
Urinalysis
Serum biochemistry, haematology, immunology, relevant endocrine blood tests
Investigation of patients with suspected TB, syphilis and other relevant infectious diseases

**Principles of ophthalmic surgery**

Sterilisation
Surgical instrumentation
Sutures and their uses
Common ophthalmic surgical procedures
Management of trauma to the eye and adnexae

**Clinical optics**
Notation of lenses: spectacle prescribing, simple transposition, toric transposition
Identification of unknown lenses: neutralisation, focimeter, Geneva lens measure
Aberrations of lenses: correction of aberrations relevant to the eye, Duochrome test
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 visual aids: high reading addition, magnifying lenses, telescopic aids - Galilean telescope
Clinical refraction; near and distance vision correction, tests of binocularity
Prescribing prisms
Direct and indirect ophthalmoscopes
Retinoscope
Focimeter
Simple magnifying glass (Loupe)
Lensmeter
Automated refractor
Slit-lamp microscope
Applanation tonometry
Keratometer
Specular microscope
Operating microscope
Zoom lens principle
Corneal pachymeter
Lenses used for slit lamp biomicroscopy (panfunduscope, gonioscope Goldmann lens, 90D lens, etc.)
Fundus camera
Lasers
Retinal and optic nerve imaging devices (OCT, SLO, GDx)

Clinical ophthalmology

Cornea and external eye disease
Clinical anatomy

Infections of the conjunctiva
Cicatricial conjunctival disease: Stevens-Johnson syndrome, mucous membrane pemphigoid; other causes
Allergic conjunctival disease; vernal keratoconjunctivitis, atopic keratoconjunctivitis, seasonal allergic conjunctivitis, giant papillary conjunctivitis
Conjunctival malignancies: ocular surface squamous neoplasia, melanocytic neoplasms
Pterygium
Benign lesions of the conjunctiva

Blepharitis and acne rosacea

Scleritis and episcleritis

Corneal infections: bacterial keratitis, herpes simplex keratitis, varicella zoster keratitis, fungal keratitis, acanthamoeba keratitis
Recurrent corneal erosion syndrome
Dry eye syndrome
Autoimmune corneal disease: peripheral ulcerative keratitis and corneal melting disorders, Mooren’s ulcer
Keratoconus and other ectasias
Pseudophakic/aphakic bullous keratopathy; other causes of corneal oedema
Corneal dystrophies, degenerations and deposits
Neurotrophic keratopathy
Trauma: penetrating, chemical injury
Congenital corneal abnormalities
Contact lenses
Corneal Transplantation, limbal stem cell transplanation
Eye banking

**Cataract and refractive surgery**
Clinical anatomy of the lens

Acquired cataract:
Aetiology
Management
  - Biometry and planning of refractive outcome
  - Intraocular lenses
Pre-operative evaluation
Predicting surgical challenges
Surgical methods, equipment and instrument
Anaesthetic techniques
Complications of cataract surgery and local anaesthesia
Managing coexisting cataract and glaucoma
Cataract surgery combined with penetrating keratoplasty
Lens-induced glaucoma
Phacolytic inflammation
Viscoelastics
Intraocular lenses
Cataract surgery post corneal refractive surgery
Managing refractive surprise after cataract surgery
Ectopia lentis
Nd:YAG laser capsulotomy

Congenital cataract including surgical management options
Optical treatment and prevention of amblyopia

Corneal refractive surgery: arcuate keratotomy, laser (LASIK, LASEK, PRK)
Refractive lens surgery; clear lens extraction, phakic IOLs

**Oculoplastics, lacrimal and orbital disease**
Clinical anatomy

Eyelid malpositions including ectropion, entropion, ptosis, lagophthalmos, lid retraction
Lash abnormalities; trichiasis, distichiasis
Congenital abnormalities of the lids
Abnormal lid swellings and benign and malignant lid lesions
Blepharospasm
Dermatochalasis
Lid trauma
Facial nerve palsy
Principles of oculoplastic surgical technique

The watering eye
Congenital and acquired abnormalities of the lacrimal system
Lacrimal surgery

Orbital cellulitis
Orbital inflammation including thyroid eye disease
Orbital tumours
Orbital trauma
Congenital abnormalities of the orbit
Vascular lesions of the orbit
Evisceration, enucleation and exenteration

Glaucoma
Relevant clinical anatomy and physiology
Epidemiology and screening
Mechanisms of glaucoma
Optic nerve head assessment
Visual field analysis in glaucoma
Tonometry
Gonioscopy
Paediatric glaucoma
Open angle glaucomas
Ocular hypertension
Angle closure glaucomas
Medical management
Laser therapies
Surgical management including complications

Medical Retinal disease
Clinical anatomy

Vascular retinal disorders:
  Diabetic retinopathy
  Arterial and venous occlusive disease
  Ocular ischaemic syndrome
  Hypertensive retinopathy
  Retinal arterial macroaneurysm
  Retinal Vasculitis
  Coat’s disease
  Sickle cell retinopathy
  Eales’ disease
  Retinal features of blood disorders, e.g. anaemia, leukaemia, and myeloma
  Retinal vascular anomalies
Age-related macular degeneration
  Epidemiology, risk factors, and pathophysiology
  Management
Retinal dystrophies
  Retinitis Pigmentosa
Flecked retina syndromes
Macular dystrophies
Congenital stationary night blindness
Choroidal dystrophies and degenerations
Hereditary vitreoretinopathies
Angioid streaks
Central serous retinopathy
Cystoid macular oedema
Degenerative myopia
Drug-induced retinal disease
Phototoxicity
Radiation retinopathy

**Vitreoretinal surgery**
Clinical anatomy

Peripheral retinal lesions
Retinal breaks
Retinal detachment
  - Rhegmatogenous
  - Serous retinal
  - Tractional
  - Proliferative vitreoretinopathy
Macular hole
Epiretinal membrane
Vitreous haemorrhage
Endophthalmitis
Trauma and IOFB
Retinoschisis

**Uveitis**
Clinical anatomy of the uveal tract

Congenital abnormalities
Infectious uveitis
Non-infectious immune-mediated uveitis
Uveitis masquerade syndromes
Systemic disease associated uveitis
Investigation of the patient with uveitis
Principles of uveitis management
Management of cataract and glaucoma in uveitis

**Ocular oncology**
Malignant intraocular tumours
  - Retinoblastoma
  - Uveal melanoma
  - Uveal metastases
  - Lymphoma and leukaemia
Benign intraocular tumours
Choroidal naevus
Choroidal haemangioma
Choroidal osteoma
Retinal hamartomas
Retinal vascular tumours
Investigation and management of intraocular tumours

**Neurophthalmology**
Clinical anatomy
Clinical assessment of ocular motility, diplopia, nystagmus, abnormal eyelid and facial movements, pupils, ptosis, proptosis, cranial nerve function and visual fields
Ocular motility disorders
Cranial nerve palsies
Visual field abnormalities
Pupil abnormalities
Nystagmus
Optic disc abnormalities
Optic neuropathies
Visually evoked cortical potentials
Pituitary and chiasmal disorders
Intracranial tumours
Headache and facial pain
Migraine
Benign intracranial hypertension
Cerebrovascular disease
Optic neuritis and multiple sclerosis
Myasthenia gravis
Parkinson’s disease
Psychosomatic disorders and visual function
Blepharospasm and hemifacial spasm
Periocular Botulinum toxin injection technique

**Paediatric Ophthalmology & Strabismus**
Clinical anatomy of the extraocular muscles
Physiology of eye movement control
Binocular function
Accommodation anomalies
Assessment of strabismus
  - Cover, cover-uncover test and alternate cover test
  - Assessment of ocular movements
  - Measurement of deviation
  - Assessment of fusion, suppression and stereo-acuity.
  - Knowledge of Hess Chart/Lees Screen, field of BSV and uniocular fields of fixation
Paediatric strabismus
  - Infantile esotropia
  - Acquired esotropia
  - Intermittent exotropia
  - Congenital superior oblique weakness
  - Duane’s syndrome
Brown’s syndrome

Adult

- Forced duction test technique
- Tests to predict postoperative diplopia
- Concomitant strabismus in adults
- Third, fourth and sixth cranial nerve palsy
- Supranuclear causes of eye movement deficits
- Strabismus due to Myasthenia, thyroid eye disease and orbital trauma

Principles of strabismus surgery

Principles of adjustable surgery techniques

Botulinum toxin, role in the management of strabismus

Paediatric refractive errors

Vision testing in children

Amblyopia

Retinopathy of prematurity

Visual loss secondary to neurological disease in infants and children

Leukocoria

Leber’s congenital amaurosis

Albinism

Phakomatoses

Aniridia

**General medicine relevant to ophthalmology**

Systemic diseases with manifestations relevant to ophthalmology in the following specialities:

- Rheumatological disease
- Dermatology
- Respiratory medicine
- Neurology
- Endocrinology
- Cardiology
- Chromosomal disorders

Medical management of the perioperative patient

Medical emergencies:

Candidates are expected to be able to assess patients with the following life threatening emergencies and initiate appropriate treatment prior to the arrival of specialised assistance:

- Cardiorespiratory arrest
- Shock
- Anaphylaxis
- Hypoglycaemia
- The breathless patient

**Ophthalmic Pathology**

Benign and malignant lesions of the eyelids

Cornea endothelial dysfunction and corneal dystrophies

Glaucoma

Cataract

Diabetes

Age Related Macular Degeneration

Retinal vascular occlusion

Retinal detachment and proliferative vitreo-retinopathy
Ocular tumours
Tissue sampling for pathological investigation; types of biopsy, fine needle aspiration, transport of specimens