

**COMPETENCES REQUIRED FOR APPLICANTS
TO ATTAIN STATE REGISTRATION AS CLINICAL SCIENTISTS**

SPECIALTY :

VISION SCIENCE



This document comprises a discipline-specific version of the general competence document and provides additional guidance as to how to complete the general document, Appendix 1 of the Guidelines, that you must submit with your application.

Remember that the aim of the process is for the candidate to satisfy the assessor that he or she has the appropriate basic qualifications and length of experience for issue of the Certificate of Attainment, and that the training programme/period of supervised practice has enabled the candidate to achieve the basic level of competence required for registration as a clinical scientist.

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	GENERIC COMPETENCES	SPECIFIC COMPETENCES
	1-SCIENTIFIC	Be able to demonstrate the rigorous application of scientific methods in his/her experience to date
Sci1	understanding the science that underpins the specialty (modality) and the broader aspects of medicine and clinical practice	<ul style="list-style-type: none"> • must understand the science that underpins the speciality of vision science • must understand the principles of the techniques and investigative procedures undertaken within vision science (visual electrophysiology, imaging etc) • must be able to advise on test selection for individual patients • must be able to critically appraise current test procedures in vision science and demonstrate an ability to modify these accordingly during routine testing • must have a basic knowledge of related disciplines for result interpretation • must have an understanding of new developments, techniques and needs within vision science
Sci2	demonstrating a strong base of knowledge appropriate to the specialty and to the investigations and therapeutic options available	
Sci3	experience of searching for knowledge, critical appraisal of information and integration into the knowledge base	
Sci4	ability to apply knowledge to problems associated with the routine provision, and development, of the service	
Sci5	ability to identify the clinical decision which the test/intervention will inform	
Sci6	ability to make judgements on the effectiveness of procedures	
Sci7	application of the knowledge base to the specialty (modality) and to the range of procedures/investigations available	
<i>Achievement of:</i>	<ul style="list-style-type: none"> • an understanding of biological and physical sciences underpinning vision science • a detailed understanding of the use of the diagnostic tests used in vision science and interpretation of results • an understanding of how visual electrophysiology integrates with other diagnostic techniques and therapies • skills and expertise required to identify problems, formulate hypotheses and develop experimental plans to resolve problems • a critical understanding of scientific methods and evaluation techniques for developing tests to be used routinely in vision science 	
<i>Achieved through:</i>	<ul style="list-style-type: none"> • successful completion of Logbook leading to issue of Certificate of Competence in Vision Science • continued self endeavour and professional development under supervision 	
<i>Assessed by:</i>	<ul style="list-style-type: none"> • Local appointed supervisor - state registered Clinical Scientist, Consultant Ophthalmologist or BriSCEV examiner 	

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GENERIC COMPETENCES		SPECIFIC COMPETENCES
	2-CLINICAL	Be able to demonstrate the following relevant to the contribution of his/her specialty to patient care:
Clin1	to understand the requirements of accuracy and precision of a procedure in the context of diagnosis, prognosis, monitoring and treatment and to use that information appropriately	<ul style="list-style-type: none"> • must have a sufficient understanding of the normal functioning of the visual system, and of the human body as a whole, to provide a foundation for the understanding of visual pathophysiology and the impact of systemic disease • must be able to interpret emerging clinical results and modify the test paradigm or individual test protocols accordingly • must be able to understand the clinical significance of the results and be able to advise on the clinical application of the tests • must be aware of contraindications and limitations of individual tests in the speciality • must understand the requirements of accuracy and precision of a procedure in the context of diagnosis, prognosis, monitoring and treatment, and to how to use that information appropriately • must be aware of hygiene and disinfection procedures, and the prevention of cross infection
Clin2	ability to provide interpretation of data and a diagnostic (therapeutic) opinion, including any further action to be taken by the individual directly responsible for the care of the patient	
Clin3	understanding of the wider clinical situation relevant to the patients presenting to his/her specialty	
Clin4	ability to develop/devise an investigation strategy taking into account the complete clinical picture	
Clin5	understanding of the clinical applications of his/her specialty and the consequences of decisions made upon his/her actions/advice	
Clin6	awareness of the evidence base that underpins the use of the procedures employed by the service	
<i>Achievement of:</i>	<ul style="list-style-type: none"> • a critical understanding of the test techniques, their limitations and contraindications • a critical understanding of result interpretation and how to make management decisions • an understanding of normal physiology, anatomy and pathophysiology relevant to vision • an understanding of medical ethics as it applies to vision science 	
<i>Achieved through:</i>	<ul style="list-style-type: none"> • successful completion of Logbook leading to issue of Certificate of Competence in Vision Science • participation in appropriate courses e.g. International or British Society for Clinical Visual Electrophysiology of Vision courses; Imaging techniques. • structured "In-house" training with a significant amount of assessed clinical experience and assessment of clinical reports 	
<i>Assessed by:</i>	• local appointed supervisor - state registered Clinical Scientist, Consultant Ophthalmologist or BriSCEV examiner	

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	3-TECHNICAL	Be able to demonstrate the following, relevant to the modality or area of specialisation in which he/she wishes to be recognised
Tech1	understanding of the principles associated with a range of techniques employed in the modality including the appropriate use of Information Technology	<ul style="list-style-type: none"> • must have a detailed understanding of all routine investigative techniques used in vision science (electrophysiology, imaging etc), with a knowledge of both test protocols and international standards of practice. • must be competent to perform all routine tests in vision science and deal with technical problems as they arise • must understand the principles and practice of health and safety at work • must be able to interpret and apply current legislation, codes of practice, quality control and quality assurance data and take the appropriate corrective action where necessary • must be able to perform and advise on the more complex procedures, measurements and calibrations in vision science
Tech2	knowledge of the standards of practice expected from these techniques including positioning of patients for safe interventions	
Tech3	experience of performing these techniques	
Tech4	the ability to solve problems that might arise during the routine application of these techniques (troubleshooting)	
Tech5	understanding of the principles of quality control and quality assurance	
Tech6	experience of the use of quality control and quality assurance techniques including restorative action when performance deteriorates	
<i>Achievement of:</i>	<ul style="list-style-type: none"> • a critical understanding of test parameters and how these affect results • an ability to critically review the results and relate to disease pathophysiology • an understanding of, and ability to apply the principles of quality assurance and Health and Safety to his/her own work 	
<i>Achieved through:</i>	<ul style="list-style-type: none"> • successful completion of Logbook leading to issue of Certificate of Competence in Vision Science • participation in appropriate courses e.g. International or British Society for Clinical Electrophysiology of Vision courses; Imaging techniques. • structured "In-house" training and a significant amount of assessed clinical experience 	
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GENERIC COMPETENCES		SPECIFIC COMPETENCES
	4-RESEARCH AND DEVELOPMENT	Be able to demonstrate a training in research which should include:
R&D1	ability to read and critically appraise the literature	<ul style="list-style-type: none"> • recognition of the value of research • basic research skills such as project design, data collection and analysis and critical appraisal of the findings • skills to critically appraise literature relevant to the candidate's specialty • an understanding of good clinical practice for medical research such as data protection, ethical approval and the requirement for anonymous data • completion of a research project that can lead to a higher degree (MSc/MPhil/PhD) and peer reviewed publication • able to present both oral and written scientific material to peers either locally or at national meetings
R&D2	ability to develop the aims and objectives associated with a project	
R&D3	ability to develop an experimental protocol to meet the aims and objectives in a way that provides reliable and robust data (i.e. free of bias)	
R&D4	ability to perform the required experimental work ability to produce and present the results (including statistical analysis)	
R&D5	recognise the value of research and has the ability to critically appraise results in the light of existing knowledge and the hypothesis developed and to formulate further research questions	
R&D6	ability to present data and provide a critical appraisal to an audience of peers – both spoken and written	
<i>Achievement of:</i>	<ul style="list-style-type: none"> • develop skills to critically appraise research literature and to consolidate, evaluate and present information from many sources • develop basic research skills to conduct research projects in own speciality including project design, data collection and analysis, statistical analysis and critical appraisal of the findings • skills to present scientific material effectively through reports, presentation and seminars, having the potential to contribute to a higher degree 	
<i>Achieved through:</i>	<ul style="list-style-type: none"> • successful completion of Logbook leading to issue of Certificate of Competence in Vision Science • evidence of supervised research leading to a higher degree (MSc/MPhil/PhD) • peer reviewed publication • presentation at local research meetings and national scientific meetings 	
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GENERIC COMPETENCES		SPECIFIC COMPETENCES
	5-COMMUNICATION	Be able to communicate in both the written and spoken media to colleagues, peers and patients:
Com1	ability to assess a situation and act accordingly when representing the specialty	<ul style="list-style-type: none"> • must be able to explain test procedures to adult and infant patients, carers and relatives, in an appropriate way and address any questions arising • must be able to communicate effectively with clinical and other health professionals • must be able to write clinical reports and service reports • must be able to present scientific material in both written and oral formats • must be able to demonstrate an involvement in education, training and supervision and junior staff
Com2	ability to respond to enquiries regarding the service provided when dealing with clinical colleagues	
Com3	ability to communicate with patients, carers and relatives, the public and other healthcare professionals as appropriate	
Com4	ability to communicate the outcome of problem solving and research and development activities	
Com5	evidence of presentation of scientific material to peers, colleagues or other healthcare professionals	
<i>Achievement of:</i>	<ul style="list-style-type: none"> • an ability to communicate clearly and with confidence to clinical and other professional colleagues both within and outside the profession of Vision Science and in both a formal and informal setting • development of written communication skills in the form of patient reports, service reports and scientific material • an ability to communicate clinical information in an appropriate manner to patients, carers and relatives • an ability to educate and train others within the speciality 	
<i>Achieved through:</i>	<ul style="list-style-type: none"> • successful completion of Logbook leading to issue of Certificate of Competence in Vision Science • participation in local research meetings and national scientific meetings • oral and written presentations and peer reviewed publications 	
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GENERIC COMPETENCES		SPECIFIC COMPETENCES
6-PROBLEM SOLVING		Be able to deal with the unexpected and thus be able to:
PS1	to assess a situation	<ul style="list-style-type: none"> • assess a situation to determine the nature and severity of problems relating to both the patient during testing and the equipment used in vision science (visual electrophysiology, imaging etc) • call upon knowledge and experience to formulate and manage a solution to equipment and patient specific problems within vision science • be aware of the consequences when problems arise and be able to communicate to people involved in or affected by the problem
PS2	determine the nature and severity of the problem	
PS3	call upon the required knowledge and experience to deal with the problem	
PS4	initiate resolution of the problem	
PS5	demonstrate personal initiative	
<i>Achievement of:</i>	<ul style="list-style-type: none"> • an understanding of the problems that can arise during vision science testing, their potential implications and the trouble shooting techniques that can be utilised • an ability to critically appraise a situation and implement the required action during routine investigative vision science, taking account of safety issues 	
<i>Achieved through:</i>	<ul style="list-style-type: none"> • successful completion of Logbook leading to issue of Certificate of Competence in Vision Science • participation in appropriate courses e.g. International or British Society for Clinical Electrophysiology of Vision teaching courses, imaging techniques etc. • a significant amount of assessed clinical experience 	
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	7-PROFESSIONAL ACCOUNTABILITY	Be able to demonstrate an understanding of management principles and techniques, including the following:
Prof1	Has read, understands and follows the Standards of Proficiency for Clinical Scientists as published by the Health & Care Professions Council	<ul style="list-style-type: none"> • demonstrate knowledge and understanding of the Standards of Proficiency for Clinical Scientists as published by the Health & Care Professions Council • recognise the legal and ethical boundaries of clinical vision science (visual electrophysiology, imaging etc) and practice and conduct research within these boundaries • recognise the limits of his/her knowledge, skills and personal practice and identify when to seek advice • understand the principles of clinical governance and be able to audit, reflect on and review practice • understands the importance of equality and diversity, confidentiality, informed consent and data security • understand the need for and the basic requirements of accreditation schemes appropriate to vision science • understand the importance of effective communication with colleagues and be able to function as an effective member of a multidisciplinary team • understand the principles of appraisal and be able to supervise staff in his/her area • participate in an appropriate CPD scheme (after completion of training) • must have acquired a basic knowledge of health and safety, and infection control requirements appropriate to vision science • possess a basic understanding of the structure and organisation of the department, and relevant financial aspects • be able to plan teaching of colleagues and trainees in vision science
Prof2	To be personally responsible for and must be able to justify their decisions	
Prof3	Understanding of the legal and ethical requirements of the modality, and the ethical aspects of scientific research.	
Prof4	Understands the need to practice safely and effectively within their abilities and can recognise the limits of personal practice and identify when to seek advice.	
Prof5	Ability to manage personal workload and prioritize tasks appropriately.	
Prof6	Can demonstrate competence in the principles of clinical governance including clinical audit, accreditation requirements relevant to the modality. This will include the importance of equality and diversity, confidentiality, informed consent and data security	
Prof7	Ability to contribute effectively to work undertaken as part of a multi-disciplinary team	
Prof8	Ability to supervise others as appropriate to area of practice. Understanding of the role of appraisal in staff management and development.	
Prof9	Understanding of the need and obligation for career-long self-directed learning and the importance of continuing professional development.	
Prof10	Understanding of the need for, and ability to establish and maintain, a safe practice environment. Understanding of the requirements and obligations of Health and Safety including infection control	
Prof11	Understanding of the structure and organization of the department and how it fits into the local clinical setting, General understanding of the way the modality is structured and practised in other locations within the UK. Basic understanding of the importance of financial accountability, budgetary control and resource management.	

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<i>Achievement of:</i>	<ul style="list-style-type: none"> • an understanding of the management principles and tools used in the service and attendance to departmental senior staff meetings • the ability to act as a professional and work effectively as part of a team • understanding of the importance and principles of accreditation, audit, confidentiality, data security and safe working practice
<i>Achieved through:</i>	<ul style="list-style-type: none"> • successful completion of Logbook leading to issue of Certificate of Competence in Vision Science • participation in local courses on general, personnel and financial management, health and safety, audit, etc • participation in local seminars, attendance at clinical audit meetings and clinical governance committees • demonstration of involvement in departmental management and mentoring by an experienced colleague
<i>Assessed by:</i>	<ul style="list-style-type: none"> • Local appointed supervisor - state registered Clinical Scientist, Consultant Ophthalmologist or BriSCEV examiner