Overview of joint accreditation of Doctoral Training Programmes with the

* Royal Society of Biology
* Royal Society of Chemistry
* Institute of Physics

Introduction

**A joint approach**

In a joint approach, the Royal Society of Biology, the Royal Society of Chemistry and the Institute of Physics can accredit the training components of programmes of post graduate study within Centres for Doctoral Training (CDT) at Higher Education Institutions (HEI).

By accrediting the training and development of post-graduate researchers, we will support the development of specific skill sets, competencies and training which will enhance science research in these disciplines.

This joint approach aims to provide an accreditation process for Doctoral Training Programmes that is capable of encompassing the broad range of expertise that exists to support doctoral students working in interdisciplinary teams.

**Our role with Vitae**

We have also ensured that our requirements for chartership are met through the Vitae Researcher Development Framework lens, so you know if you are implementing the framework then your students will be on their way to meeting the requirements for chartership.

**What accreditation covers**

“Accreditation” of Doctoral Training Programmes follows an independent and rigorous assessment of the skills development and training aspects of a doctoral programme. Through this, it will provide assurances that the development programme is of a suitable standard which meets the requirements needed for achieving chartered status.

It does not assess the quality of the research produced by doctoral students, which remains under the remit of the thesis examiners. Similarly, the accreditation process does not seek to define a highly specified curriculum for doctoral training, or an approach to delivery. The assessment of such programmes will, however, take a view on both the preparedness of students to undertake original research and how the research environment may enable them to achieve their research goals. In addition, the accreditation process will seek to ensure that students are provided with opportunities to equip themselves with the skills necessary to promote and explain their research to a variety of audiences.

**Outcomes**

The outcome of the accreditation is that the students will have begun to accrue evidence that meets the criteria for becoming a chartered professional in their field, giving them a head start over their peers when it comes to demonstrating competence and commitment to their development. For example, a chemistry based student graduating from an accredited programme will be able to submit their application for Chartered Chemist at the end of their first post-doctoral working year.

The Royal Society of Biology

The Royal Society of Chemistry

The Institute of Physics

How it works

**Q: Which professional bodies get involved?**

A: This depends on the disciplines that are covered in the CDT programme and which parts you want to get accredited. For example, a CDT programme that covers biology and chemistry disciplines will only need to be covered by the Royal Society of Biology and Royal Society of Chemistry respectively. If the CDT programme covers biology, chemistry and physics disciplines, then all three professional bodies will be involved.

You will have a dedicated contact at each professional body who will work with you to ensure that all the necessary information is included for each professional body.

**Q: How do we get accredited?**

Through a joint approach, one application (the ‘submission document’) needs to be submitted to your primary professional body contact. You will be supported throughout the creation of the application. The application covers the following areas:

- Aim of the Scheme

- Glossary of Terms including a list of acronyms and definitions used by the HEI

- Overview of the Doctoral Training Programme

- Staff Structure

- Training and Development

- Supervisor Training

- Mentoring and Support Networks

- Quality Assurance and Assessment

- Recruitment and selection including Equality and Diversity

- Progression Processes

- Scope of the Accreditation

- Evaluation Strategy/Plan

- Evidence Template

The following also needs to be submitted:

* Completed accreditation matrix for each discipline. This covers how each competence requirement for each chartership is met through the training and development practices at the HEI. Please see the following pages for the chartership requirements.
* Destination data for recent graduates of the programme
* Resource documents:

- an overview of the facilities available at the HEI relating to the programme

- brief CVs for the programme leader(s) and key academic staff involved in the accredited programme

When your application is approved by staff, a site assessment visit will be undertaken by the assessors**.**

**Note: The specific requirements and outcomes from each professional body will be outlined by each contact from the relevant professional body.**

The Royal Society of Biology

The accreditation of doctoral training programmes in the biosciences is based on twelve criteria, which have been developed in consultation with our bioscience community. These criteria enable graduate students to function safely and effectively as researchers both within their specialised field of research and on a wider stage. Students will accrue evidence against each requirement.

The attributes for Chartered Biologist are as follows:

1. A high level of professional skills in the field of biology, including thoroughness and reliability
2. An understanding and appreciation of health, safety and environmental and ethical issues and adherence to the requirements relevant to their role
3. Integrity and respect for confidentiality in work, personal and professional issues, such as ethical practice
4. An interest in broader developments in biological science; and a contribution to the profession of biology outside their direct work environment
5. An ability to work as part of a team
6. Skills in biological science plus other professional skills as required for work undertaken and career development
7. Skills in critical evaluation and in drawing conclusions from scientific and other data
8. Time management skills, demonstrating foresight in carry out responsibilities and offering suggestions for improvements to areas of responsibility
9. That they make a contribution to key tasks in their employment, understanding fully the biological science objectives of the work done and its relevance to their employer and others
10. That they communicate through clear, concise and orderly documents and comprehensible oral information
11. That they discuss work constructively and objectively with colleagues, customers and others; that they respond respectfully to, and acknowledge the value of alternative views and hypotheses
12. That they exert effective influence as appropriate

The Royal Society of Chemistry

The accreditation of doctoral training programmes in the chemical sciences is based on twelve criteria, which have been developed in consultation with our chemical science community. These criteria enable graduate students to develop a wide range of skills needed to be an effective scientist including developing knowledge, exercising autonomy and professionalism, communication, health and safety and the environment as well as contributing to the wider scientific and general communities. Students will accrue evidence against each requirement in their final year. The attributes for Chartered Chemist are as follows:

1. **Demonstrate and develop your knowledge and experience of chemistry as well as analytical and scientific skills.**

A.1 Make significant personal contributions to key tasks in your employment area and understand fully the objectives of your work as they relate to the chemical sciences.

A.2 Demonstrate a high level of appropriate professional skills in the practice or advancement of the chemical sciences.

A.3 Develop your chemistry and other professional skills as required for work undertaken and career development.

A.4 Evaluate critically and draw conclusions from scientific and other data.

1. **Exercise autonomy and professionalism in the workplace.**

B.1 Demonstrate reliability, integrity and respect for confidentiality on work related and personal matters.

B.2 Plan, organise and implement work systematically and deliver results or improvements.

B.3 Demonstrate the ability to work as part of a team.

1. **Communicate effectively and demonstrate influence in your role.**

C.1 Demonstrate good communication skills by writing clear, concise and orderly documents and/or giving clear oral presentations.

C.2 Discuss work convincingly and objectively with colleagues, customers and others, responding appropriately to alternative views.

C.3 Exert effective influence.

1. **Demonstrate an involvement in Environmental, Health and Safety matters and adhere to the relevant requirements relating to your role.**
2. **Demonstrate an interest in broader developments in the chemical sciences and make a contribution to the profession outside your usual job remit.**

Institute of Physics

The accreditation of doctoral training programmes in the physical sciences is based on the following criteria, which have been developed in consultation with our physical science community. These criteria enable graduate students to develop a wide range of skills needed to be an effective scientist including applying knowledge effectively, solving problems, displaying leadership skills and professionalism. Students will accrue evidence against each requirement. The attributes for Chartered Physicist are as follows:

**A. Application of general and specialist knowledge**

You should demonstrate your ability to:

a) evaluate data critically, drawing logical conclusions;

b) apply a logical approach to problem solving;

c) apply a creative problem-solving approach to physics-related projects.

In addition you are asked to demonstrate your ability in two of the following areas:

d) exploit and/or develop emerging technologies to enhance current practices;

e) ensure continuing fitness for purpose of products and services;

f) publish in peer-reviewed scientific journals to further the understanding of the physics community;

g) promote innovation and technology transfer;

h) supervise undergraduate or post-16 physics project work;

i) design and deliver undergraduate programmes;

j) contribute to the profession outside your immediate working environment;

k) contribute to the public understanding of physics.

**B. Applying physics to the analysis and solution of problems**

You should demonstrate your ability to:

a) identify potential projects and opportunities using your physics knowledge;

b) conduct and document appropriate research and design possible solutions;

c) plan and implement solutions;

d) evaluate solutions and make improvements.

**C. Technical and managerial skills**

You should demonstrate your ability to:

a) plan for effective project implementation;

b) make effective use of all resources (such as people, time, finance, physics knowledge) and demonstrate leadership in carrying out tasks;

c) develop the capabilities of people for whom you are responsible, e.g. students, team members, to meet the demands of changing

technical and managerial requirements;

d) bring about continuous improvement through quality management.

D. Communication and interpersonal skills

You should demonstrate your ability to:

a) communicate clearly and effectively with others at all levels, by both oral

and written methods;

b) present and discuss concepts, ideas and plans convincingly and

objectively with your superiors and others;

c) participate effectively within a team;

d) exert appropriate influence and effective leadership qualities.

**E. Professional conduct**

d) carry out the continuing professional development necessary to ensure

competence in your future career. Note that anyone awarded CPhys

after 31/12/11 will be required to submit evidence of their continuing

professional development (CPD) every three years to retain the

designation

Registered Scientist (same competences for all three professional bodies)

**A: Application of knowledge and understanding: Identify and use relevant scientific understanding, methods and skills to address broadly-defined, complex problems**

*A1: Develop, maintain and extend a sound theoretical approach to application of science and technology in practice.*

*A2: Apply underlying scientific concepts, principles and techniques in the context of new and different areas of work.*

*A3: Analyse, interpret and evaluate relevant scientific information, concepts and ideas and to propose solutions to problems.*

**B: Personal responsibility: Exercise personal responsibility in planning and implementing tasks**

*B1: Work autonomously while recognising limits of scope of practice.*

*B2: Take responsibility for safe working practices and contribute to their evaluation and improvement.*

*B3: Promote and ensure the application of quality standards.*

*B4: Take responsibility for planning and developing courses of action as well as exercising autonomy and judgement within broad parameters.*

**C: Interpersonal skills: Demonstrate effective communication and interpersonal skills**

*C1: Demonstrate effective and appropriate communication skills.*

*C2: Demonstrate interpersonal and behavioural skills.*

*C3: Demonstrate productive working relationships and an ability to resolve problems.*

**D: Professional practice: Apply appropriate theoretical and practical methods**

*D1: Identify, review and select scientific techniques, procedures and methods to undertake tasks.*

*D2: Contribute to the organisation of tasks and resources.*

*D3: Participate in the design, development and implementation of solutions.*

*D4: Contribute to continuous performance improvement.*

**E: Professional standards: Demonstrate a personal commitment to professional standards**

*E1: Comply with relevant codes of conduct and practice.*

*E2: Maintain and enhance competence in own area of practice through professional development activity.*