**FACULTY OF SCIENCE:** **TRAINING NEEDS ANALYSIS (TNA)**

An individual approach to develop the skills and experience you should gain by the end of your higher degree studies.

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| Name of student: |
| Department or School: |
| Names of all supervisors: |
| Year of study: |

**Completing your TNA.** Before completing your TNA in consultation with your primary and secondary supervisor, you should read the [guidance notes](http://www.shef.ac.uk/polopoly_fs/1.93105%21/file/TNA-Guidance-FCP.pdf) that accompany this form. The Faculty’s TNA form has been compiled with reference to the [Vitae Researcher Development Framework](https://www.vitae.ac.uk/researchers-professional-development/about-the-vitae-researcher-development-framework) (RDF), which was developed in consultation with a [range of stakeholders](https://www.vitae.ac.uk/researchers-professional-development/about-the-vitae-researcher-development-framework/vitae-researcher-development-statement-endorsements) including RCUK, HEFCE, The British Library and the Higher Education Academy. This development tool divides into four ‘Domains’ the skills, and attitudes and behaviours required to be an effective researcher. The framework is also recognised widely outside academia, and can provide you with an effective way of articulating your skills to future employers. If you are unfamiliar with the RDF, it may be useful to visit the [relevant section](https://www.vitae.ac.uk/researchers-professional-development/about-the-vitae-researcher-development-framework) of the Vitae website.

**Level of experience/ability.** When assessing your current ability or experience in a specific area and identifying the level that you wish to attain, please use the numbers below. Note, each TNA is unique as it is a reflection of the experiences and abilities of an individual. There are no right or wrong answers.

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| **Key** | **Experience** | **Knowledge/understanding** | **Skill level** |
| 1 | I have no experience of this. | I have no knowledge/understanding of this. | I have no skill in this area. |
| 2 | I have some limited experience of this. | I have a little knowledge/understanding of this. | I have some basic skill in this area. |
| 3 | I have regular experience of this, but require further experience to become highly proficient | I have a good working knowledge of this area, but need to increase my knowledge to become highly proficient. | I am competent in this area, but require further development to become highly proficient. |
| 4 | I have extensive experience of this, and am able to use this experience effectively in my research. | I have extensive knowledge in/understanding of this area, which supports my research effectively. | I am highly skilled in this area, to a level that supports my research effectively. |
| 5 | I consider myself an expert in this and could train others in the area. | I consider myself an expert in this and could train others in the area. | I consider myself an expert in this and could train others in the area. |

Students grading their level of knowledge and experience at 1-3 should seek further training or ensure that they undertake activities that will enhance their knowledge (where appropriate). In order to be able to grade your experience, knowledge, understanding or skill at a 4 or 5 it is likely that you will have received relevant training at Masters level or equivalent, and received documentation confirming this. Those grading their level of knowledge and experience at 5 may, with approval from their supervisors, seek further training if they wish.

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| **IMPORTANT NOTE FOR ALL STUDENTS AND SUPERVISORS:** The TNA should be **evidence based**. Students should detail how they have obtained the skills and knowledge they have in the space provided on this form – or as attachments to this document. The evidence they provide in this section of the form may include, but is not restricted to: the successful completion of a module, course or training session; work experience; published or submitted writing or assessment; attendance at or participation in conferences, symposia and research seminars; public engagement activities and/or other forms of research dissemination. |

**Prioritising your training and development**

Academic, professional and personal developments are all key aspects of your doctoral research experience, and the Faculty will support you to develop your skills throughout the course of your PhD. However, time is a precious resource, so it is important to ensure that you undertake the right training at the right stage of your PhD, nor should it detract from the completion of your thesis on time. When considering the priority of each aspect of each item in the following table, please decide – in consultation with your supervisor – whether the item is LOW, MEDIUM or HIGH priority for the upcoming year.

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| **RDF Domain A: Knowledge and Intellectual Abilities**  *the knowledge, intellectual abilities and techniques to do research* | | | | | |
|  | **Current skill level** | **How has this skill level been obtained (with evidence)?** | **Required skill level** | **Priority** | **Training plan agreed with supervisor(s), i.e. DDP modules, training courses etc.** |
| Knowledge of the research methods in the fields relevant to my PhD **A1** |  |  |  |  |  |
| Knowledge of relevant IT packages to my studies and field in general **A1** |  |  |  |  |  |
| Evidence of numeracy and experimental design skills relevant to your area of research **A1** |  |  |  |  |  |
| Knowledge of how to retrieve and organise information effectively **A1** |  |  |  |  |  |
| Ability to identify, gather, critically appraise and synthesise research literature, identifying gaps and prioritising research in those gaps. **A1** |  |  |  |  |  |
| Ability to convert a research idea into a testable hypothesis **A2** |  |  |  |  |  |
| Ability to use common equipment expected to be found in a science laboratory and ability to troubleshoot methodological problems **A2** |  |  |  |  |  |
| Ability to evaluate and scrutinize own experimental results, demonstrating that as much information as reasonably possible been extracted **A2** |  |  |  |  |  |
| Ability to respond to findings and innovate when progressing a research question **A3** |  |  |  |  |  |
| Ability to keep up to date with new research developments and critically appraise impact on own research **A3** |  |  |  |  |  |
| Broader understanding of research in other fields applicable to my field **A3** |  |  |  |  |  |
| Anything else identified and agreed by the supervisor and the student [please specify]: |  |  |  |  |  |
| **RDF Domain B: Personal Effectiveness**  *the personal qualities and approach to be an effective researcher* | | | | | |
|  | **Current skill level** | **How has this skill level been obtained (with evidence)?** | **Required skill level** | **Priority** | **Training plan agreed with supervisor(s), i.e. DDP modules, training courses etc.** |
| Development of self-confidence coupled with healthy scepticismand willingness to take responsibility for one’s work **B1** |  |  |  |  |  |
| An ability to manage time effectively **B2** |  |  |  |  |  |
| Ability to work effectively with colleagues, understanding how teams work together and respecting the contributions of others **B2/C1** |  |  |  |  |  |
| Knowledge of how to make the most of conferences **B3/D2** |  |  |  |  |  |
| Networking skills with individuals from other institutions and/or industry **B3** |  |  |  |  |  |
| Understanding of how to prepare for the viva **B3** |  |  |  |  |  |
| Ability to write a good CV, and highlight employability through, for example, a cover letter demonstrating the transferable nature of research skills gained to other work environments **B3** |  |  |  |  |  |
| Understanding of the range of career destinations PhDs both within and outside academia **B3** |  |  |  |  |  |
| Anything else identified and agreed by the supervisor and the student [please specify]: |  |  |  |  |  |
| **RDF Domain C: Research Governance and Organisation**  *the knowledge of the standards, requirements and professionalism to do research* | | | | | |
|  | **Current skill level** | **How has this skill level been obtained (with evidence)?** | **Required skill level** | **Priority** | **Training plan agreed with supervisor(s), i.e. DDP modules, training courses etc.** |
| Ability to keep good records of own research according to professional and legal requirements where appropriate **C1** |  |  |  |  |  |
| Understanding of plagiarism, why it is wrong, and how to avoid it **C1** |  |  |  |  |  |
| Understanding of copyright issues relevant to doctoral research **C1** |  |  |  |  |  |
| Understanding of research ethics and good research practice relevant to their research field **C1** |  |  |  |  |  |
| Experience with health and safety in the workplace:; understanding COSHH and process risk assessment and the legal framework for safe working practices; employers and employees responsibilities and what needs to be considered. **C1** |  |  |  |  |  |
| Knowledge of how to plan and manage a research project **C2** |  |  |  |  |  |
| Ability to draft research proposals for funding **C3** |  |  |  |  |  |
| Anything else identified and agreed by the supervisor and the student [please specify]: |  |  |  |  |  |
| **RDF Domain D: Engagement, Influence and Impact**  *the knowledge and skills to work with others and ensure the wider impact of research* | | | | | |
|  | **Current skill level** | **How has this skill level been obtained (with evidence)?** | **Required skill level** | **Priority** | **Training plan agreed with supervisor(s), i.e. DDP modules, training courses etc.** |
| An ability to communicate orally in an effective manner to peers **D1** |  |  |  |  |  |
| Understanding of how to get the best from the student-supervisor relationship **D1** |  |  |  |  |  |
| Experience of presenting research at conferences/workshops **D2** |  |  |  |  |  |
| Knowledge of how to create materials suitable for presentation on-line **D2** |  |  |  |  |  |
| Knowledge of how to prepare research for publication **D2** |  |  |  |  |  |
| Knowledge of writing styles appropriate to graduate research in my field **D2** |  |  |  |  |  |
| Involvement in outreach activities, particularly to demonstrate the value of research, be it your own, or that of others **D3** |  |  |  |  |  |
| Experience of teaching and demonstrating **D3** |  |  |  |  |  |
| Understanding of how to make my research count (i.e. impact, outreach and knowledge exchange) **D3** |  |  |  |  |  |
| Anything else identified and agreed by the supervisor and the student [please specify]: |  |  |  |  |  |

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| **Student signature:** | **Date:** |
| **Signatures of all supervisors:** | **Date:** |
| **Signature of departmental PGR Director:** | **Date:** |