

IOP

Institute of Physics

**Aligning professional skills of
graduates across STEM
disciplines to meet employer
needs**

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Degree Accreditation

Degree accreditation has a dual purpose

- Uphold quality and standard of physics degrees
- Confirm degrees meet educational requirements for professional registration

Accreditation covers the UK and Ireland

Current process

- Centred on the *Core of Physics* and Graduate Skills Base
- Focus is on the physics degree – not the graduate

Issues –

- Results in little differentiation between degrees
- Breadth of *Core* can sacrifice knowledge depth, understanding and skills coverage
- Lack of flexibility to tailor degrees to areas of research or local industry interests

Skills

- 1990 Future Pattern of Higher Education in Physics (IOP)
- 2001 Physics – building a flourishing future (IOP)
- 2008 Review of the Student Learning Experience in Physics (HEA)
- 2010 Skills required by new physics graduates (HEA)
- 2016 Wakeham Review of STEM Degree Provision and Graduate Employability

Employer feedback

Physics graduates can lack:

- Commercial/business awareness/entrepreneurship
- Ability to communicate to a wide variety of audiences
- Written skills (particularly non-technical)
- Leadership skills
- Critical thinking
- Creativity
- Team working skills including negotiation and delegation
- Self-management and responsibility for their own learning and development

Revised accreditation scheme

- Focus shift to what a physics graduate should be able to do
- *Core* reduction to the fundamentals detailed in QAA Physics, Astronomy and Astrophysics Benchmark Statement
- Increased focus on skills development

Benefits

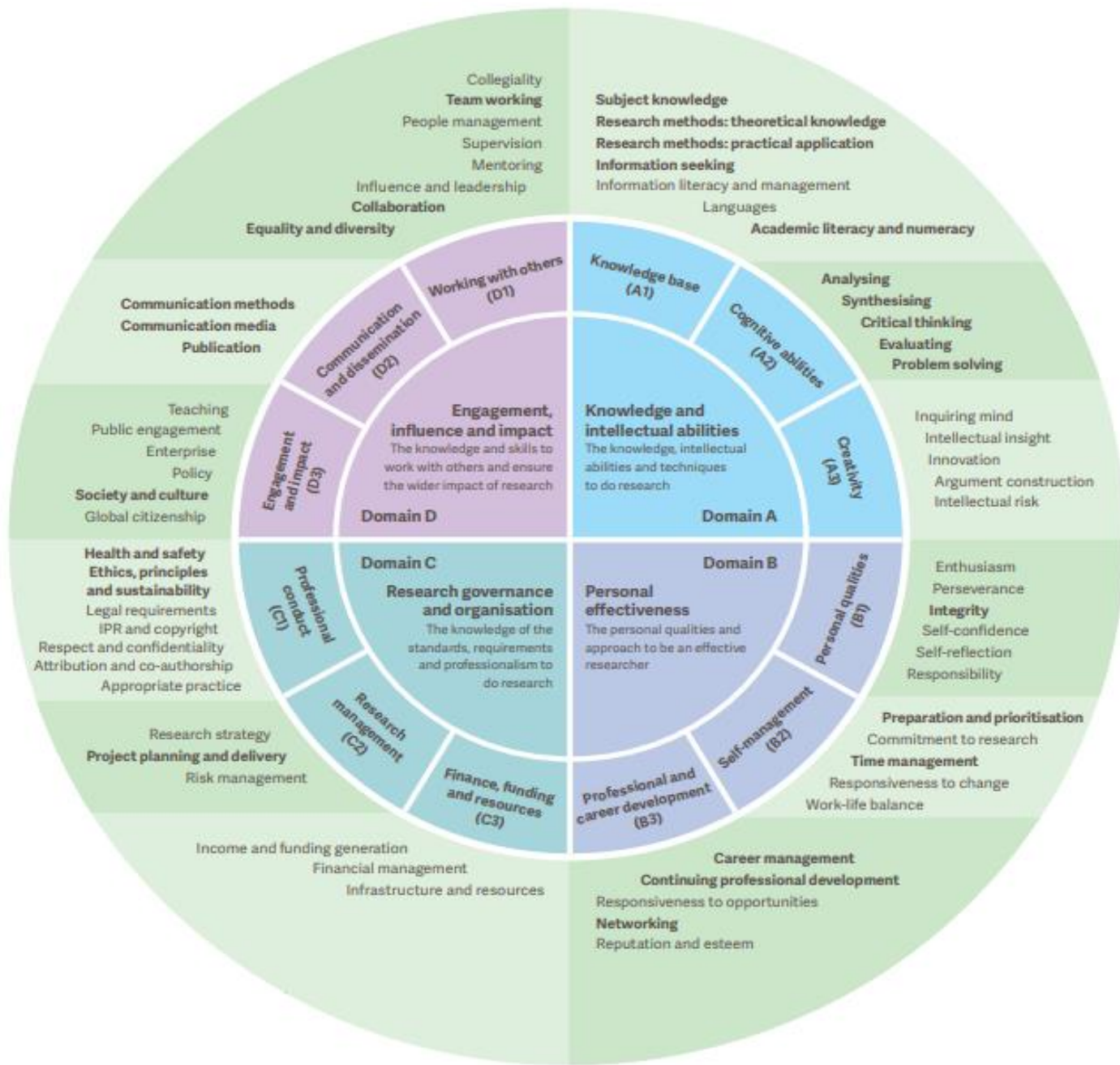
- Room in the curriculum to reflect research interests and to accommodate local employer needs
- More opportunity to include interdisciplinary topics such as climate change
- Easier to include integral study abroad year or placements
- Potential for more optional modules to increase student choice
- Time to develop conceptual understanding of the fundamental areas of physics
- Greater development of employability skills
- More alignment with the accreditation schemes of other professional bodies

Implications

- Physics content will need to be reduced to accommodate enhanced skills coverage
- Departments will need to embed enhanced skills coverage and demonstrate development from year to year
- Consideration will need to be given to the appropriate form of delivery and assessment
- Applications will be more narrative and reflective
- Failing to cover skills adequately will result in loss of accreditation

PhD Skills Accreditation

- Working with the Royal Society of Chemistry and the Royal Society for Biology
- Imperial University MARS programme
- Vitae Researcher Development Framework



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