UK Atomic Energy Authority

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Culham Campus
Abingdon
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Background

Undergrad courses

- Total of 300 CATs (with 90 at L6) Eng, Wales, NI
    - 3000 hours of notional learning time, with 900 at L6
- Total of 480 SCQFs (with 60 at L9 – Scottish levels) Scotland
- Defining a fusion undergrad course is not necessary as not making partnership investments directly for this, however will be useful to define number of notional learning hours of fusion relevant/specific content in undergrad courses if presented as part of the additional benefits of a partnership case.

Stand Alone Master's courses

- Total of 180 CATS (with 150 at L7)
- 1800 hours of learning effort or notional learning time, with 1500 at L7
- C.36% is a research project = 648 hours
- Modules are c. 100-300 hours with 200 hours being typical

Integrated Master's courses

- Total of 480 CATS (with 120 at L7)
- 4800 hours of learning effort or notional learning time, with 1200 at L7

Fusion Master's course

A stand-alone master's course is c.1800 hours of learning

Fusion-specific learning, is defined as learning (either taught or self-directed) which directly addresses fusion science and technology, using examples specific to a fusion device (of any fusion approach) and explicitly referencing the relevance and application of the learning to the fusion industry.

Fusion-relevant learning, is defined as learning (either taught or self-directed) which does not explicitly reference a fusion science or technology, but could be argued as being beneficial to the fusion industry

A non-exhaustive list of examples are provided below:

Examples of fusion-specific learning	Examples of fusion-relevant learning
Material properties in a fusion environment	Generic principals of material properties
Hydrogen-specific chemistry	Chemical processes
Isotope separation technology	Theoretical physics
Plasma physics	Modelling techniques
Modelling of fusion-specific applications	Systems Integration
Fusion power-plant systems integration	Magnet science and technology
Fusion technology approaches (MCF, ICF etc)	AI and computing

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Superconducting magnets for plasma confinement AI applications for fusion-models and power-plant control Radiological waste-management for fusion-relevant materials Risk management for integrated systems/fusion power plants Magnetohydrodynamics Thermodynamics of a fusion power plant	Risk analysis Nuclear fission Engineering (all disciplines)

Every hour of fusion-specific learning scores 1

Every hour of fusion-relevant learning scores 0.5

For a Master's to be recognised, it must have a score of 800 (with fusion-specific learning making up at least 400 of this score)

Eg.

- 400 hours fusion-specific + 800 hours fusion-relevant + 600 hours other
- 500 hours fusion-specific + 600 hours fusion-relevant + 700 hours other
- 600 hours fusion-specific + 400 hours fusion-relevant + 800 hours other

Where courses contain a research project that may, or may not, be fusion specific due to the logistical nature of how these are arranged, these project hours will be calculated as fusion-relevant.

Where courses contain a dissertation element (typically 600 hours), these hours will be calculated as fusion-relevant.