Letter of support for International Baccalaureate Physics qualifications submitted for funding approval July 2023

The purpose of this letter of support is to provide evidence of the University's recognition of the value of this qualification in preparing learners for transition to higher education courses in the subject, or a related area. This is a requirement of the Department for Education's approval process for the funding of Alternative Academic Qualifications (AAQ).

This letter of support is in relation to the following qualifications:

- IBO Level 3 Certificate in HL Physics (AAQ)
- IBO Level 3 Certificate in SL Physics (AAQ)

IBO Level 3 Certificate in HL Physics (AAQ)

a) We recognise this qualification specifically as meeting subject entry requirements for courses such as: Physics BSc/MPhys, Natural Sciences BSc/MSci, and Mechanical Engineering BEng/MEng, for which A level Physics also is a requirement. We additionally recognise this qualification as meeting the more generic requirement for a science subject required by some of our other degrees, as we would for A level Physics.

b) We recognise this qualification for entry onto many of our related courses. As for most universities, many of our programmes do not have pre-requisite subjects and a range of subjects can provide a sound academic preparation for our degrees. IBO Level 3 Certificate in HL Physics (AAQ) provides this sound academic preparation.

The University of Bath has for many years accepted the IBO Level 3 Certificate in HL Physics for entry in these courses, either as part of the IB Diploma Programme, as a separate qualification equivalent to A Level, or as part of the IB Career-related programme. The University uses the following equivalence scale to compare the IBO Level 3 Certificate in HL Physics to A level Physics:

IBO Level 3 Certificate in HL Physics (AAQ) grade	A Level Physics grade
7	A*
6	A
5	B
4	C

We have found that the grades achieved by applicants holding the IBO Level 3 Certificate in HL Physics are an accurate guide to potential achievement in undergraduate courses at the university and are an effective part of the selection process.

Applicants who do not take this qualification as part of the IB Diploma Programme can be considered on the based on their stand-alone IB Higher Level Certificates either on their own or combined with other qualifications.

We will consider applicants studying the IB Career-related Programme on a case-by-case basis based on the individual IB certificates and vocational qualifications studied within the programme which must be equal to at least three A levels to be considered.

For candidates studying only three Higher Level Certificates, will also be looking for evidence of a high academic standard across a breadth of study through their wider school curriculum or additional qualifications. The IB Higher Level Certificates will need to include any essential subjects, as listed on our course pages.

The IBO Level 3 certificate in HL Physics (AAQ) provides a firm foundation in the principles of physics allowing candidates to progress successfully to undergraduate courses where a deep knowledge of physics is a pre-requisite. The qualification content covers the fundamental principles of physics which includes:

Space, time and motion

- Kinematics
- Forces and momentum
- Work, energy and power
- Rigid body mechanics
- Galilean and special relativity

The particulate nature of matter

- Thermal energy transfers
- Greenhouse effect
- Gas laws
- Thermodynamics
- Current and circuits

Wave behaviour

- Simple harmonic motion
- Wave model
- Wave phenomena
- Standing waves and resonance
- Doppler effect

Fields

- Gravitational fields
- Electric and magnetic fields
- Motion in electromagnetic fields
- Induction

Nuclear and quantum physics

- Structure of the atom
- Quantum physics
- Radioactive decay
- Fission
- Fusion and stars

Additionally, the qualification develops the key skills necessary for students to access undergraduate physics and other undergraduate science and engineering courses:

- Experimental techniques

- The use of appropriate technology to collect, analyse and model data
- The use of mathematics

In our undergraduate courses we expect our students to take an inquiring approach to their studies. The IBO Level 3 Certificate in HL Physics (AAQ) qualification supports this aspect through its inquiry process through which candidates demonstrate independent thinking, initiative, and insight through the following:

- Exploring and designing
- Collecting and processing data
- Concluding and evaluating

IBO Level 3 Certificate in SL physics (AAQ)

a) We recognise this qualification for entry onto our related courses.

The university welcomes applicants holding the IBO Level 3 SL certificate in Physics (AAQ) as it provides breadth to an applicant's studies and provides a complementary qualification alongside other IBO HL courses, or other qualifications enabling applicants to prepare for courses such as Natural Sciences BSc/MSci, Architecture BSc, Electronic and Electrical Engineering BEng/MEng by providing them with the fundamental knowledge and understanding of physics which supports progression to these courses. We value the skills and knowledge that students with this qualification bring and the contribution to their success.

For certain courses we additionally accept the IBO Level 3 SL certificate in Physics (AAQ) in place of IBO Level 3 HL certificate in Physics (AAQ) to meet relevant subject pre-requisites.

The IBO Level 3 Certificate in SL Physics (AAQ) provides a firm foundation in the principles of physics allowing candidates to progress successfully to undergraduate courses where a knowledge of physics is desirable. The course content covers the fundamental principles of physics which include:

Space, time and motion
- Kinematics
- Forces and momentum
- Work, energy and power
- Rigid body mechanics

The particulate nature of matter
- Thermal energy transfers
- Greenhouse effect
- Gas laws
- Current and circuits

Wave behaviour
- Simple harmonic motion
- Wave model
- Wave phenomena
- Standing waves and resonance
- Doppler effect

Fields
- Gravitational fields
- Electric and magnetic fields
- Motion in electromagnetic fields

Nuclear and quantum physics
- Structure of the atom

- Radioactive decay
- Fission
- Fusion and stars

Additionally, the qualification develops the key skills necessary for students to access undergraduate physics and other undergraduate science courses:

- Experimental techniques
- The use of appropriate technology to collect data
- The use of mathematics

In our undergraduate courses we expect our students to take an inquiring approach to their studies. The IBO level 3 certificate in SL Physics (AAQ) supports this aspect through its inquiry process which includes:

- Exploring and designing
- Collecting and processing data
- Concluding and evaluating

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