

26 July 2023

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: Mechanical Engineering BEng, General Engineering BEng, for which A-level Physics also is a requirement.

b) We recognise this qualification for entry onto many of our related courses.

We class Physics as a numerate subject and expect applicants for Engineering courses to hold either Physics, Maths or Computer Science at Level 3.

The university 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 or as a separate qualification equivalent to A Level, or as part of the IB Career-related programme. The University uses the UCAS tariff to set entry requirements for mixed qualifications:

IBO Level 3 Certificate in HL Physics (AAQ) grade	UCAS Tariff
7	56
6	48
5	32
4	24
3	12

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.

The University will accept the following combinations of IBO qualifications:

- Two Standard Level and two Higher Level Certificates or
- Three Higher Level Certificates.

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
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Additionally, the qualification develops the key skills necessary for students to access undergraduate computing, engineering, and other undergraduate science 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 Diagnostic Radiography BSc and our undergraduate Engineering degrees 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.

The University uses the UCAS tariff to set entry requirements for mixed qualifications:

IBO Level 3 Certificate in SL Physics (AAQ) grade	UCAS Tariff
7	28
6	24
5	16
4	12
3	6

The University will accept the following combinations of IBO qualifications:

- Two Standard Level and two Higher Level Certificates or
- Three Higher Level Certificates.

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 includes:

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 computing and 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

We are very supportive of students, both UK and international, who take the International Baccalaureate qualifications and then progress into Higher Education and welcome the breadth that these qualifications give to their education post-16. This breadth helps to open up opportunities, particularly in STEM and health subjects, for progression into Level 4 of an undergraduate degree with us.

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