

HIGHER EDUCATION ACHIEVEMENT REPORT

Joseph Jamie Webb
Bachelor of Science (with Honours) Mathematics and Physics
First Class Honours
02/07/2024

This Higher Education Achievement Report incorporates the model developed by the European Commission, Council of Europe and UNESCO/CEPES for the Diploma Supplement.

The purpose of the Supplement is to provide sufficient recognition of qualifications (diplomas, degrees, certificates etc). It is designed to provide a description of the nature, level, context and status of the studies that were pursued and successfully completed by the individual named on the original qualifications to which this Supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition.

Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why. The University of Warwick only produces HEARs in a digital format. Only HEARs accessed or verified via www.gradintel.com can be considered valid.

Section 1: Information identifying the holder of the qualification

1.1 Family name(s):	Webb
1.2 Given name(s):	Joseph Jamie
1.3 Date of birth (day/month/year):	10/01/2001
1.4 Student identification number:	2124179
HESA identification number:	2111631241792

HUSID (HESA Unique Student Identifier) is the unique national identifying number for students registered at a UK university. It is defined by HESA, the UK's Higher Education Statistics Agency.

Section 2: Information identifying the qualification

2.1 Qualification achieved:	Bachelor of Science (with Honours)
The power to award degrees is regulated by law in the UK.	
2.2 Main field(s) of study:	Mathematics and Physics
2.3 Name and status of awarding institution:	The University of Warwick
The University of Warwick is self-governing and legally independent of government but subject to its policies and laws. The University is a degree awarding institution, operating under a Royal Charter which was established in 1965.	
2.4 Name and status of institution (if different from 2.3) administering studies:	As awarding institution
2.5 Language(s) of instruction/examination:	English

Section 3: Information on the level of the qualification

- 3.1 HESA level of qualification:** UK Bachelors Degree with Honours Level 6 (European HE 1st cycle qualification)

See section 8 for reference to nationally devised "level indicators" which relate to the qualification as contained within the Framework for Higher Education Qualifications in England, Wales and Northern Ireland, (QAA, 2008). Also available at <http://www.qaa.ac.uk/>.

- 3.2 Official length of programme:** 3 years full-time

- 3.3 Programme entry requirements or access:**

The University aims to admit students of the highest calibre, who have the academic potential and the motivation to succeed on its challenging courses. The University encourages applications from applicants from all backgrounds and it consistently evaluates the potential of each applicant individually and on their own merits.

Section 4: Information on the contents and results gained

- 4.1 Mode of study:**

Year	Mode of Study
21/22	Full-time according to Funding Council definitions
22/23	Full-time according to Funding Council definitions
23/24	Full-time according to Funding Council definitions

- 4.2 Programme requirements:**

Mathematics and physics are complementary subjects. Often, a way of thinking developed in one discipline leads to new insights into the other. The advances in the mathematical theory of dynamical systems and chaos are an example. Ideas from the theory are now applied in the modelling of physical systems such as the atmosphere, lasers and other complex systems. In both subjects the emphasis is on learning how to recognise the surprising and how to reason. So, although the joint degree is the natural route into theoretical physics, the skills it teaches are universal and can lead to many different careers. Our former students have gone on to work in industry and in professions such as business, journalism and the financial sector.

4.3 Programme details, and the individual grades/marks/credits obtained:

Programme start date: 02/10/2023

Programme end date: 29/06/2024

The University of Warwick introduced component assessment marks for the HEAR in the academic year 2021/2022. Prior to 2021/2022 component assessment marks are not available.

Mathematics and Physics 21/22

Year	Module Code	Title	Mark %	Credits	ECTS Credits
21/22	MA106-12	Linear Algebra	78	12.0	6.00
		Assessment	Weight	Mark	
		Examination - Summer (Weeks 4 to 9)	85%	74.00	
		Worksheet	15%	100.00	
21/22	MA117-12	Programming for Scientists	99	12.0	6.00
		Assessment	Weight	Mark	
		Worksheet	35%	100.00	
		Worksheet	25%	100.00	
		Worksheet	40%	98.00	
21/22	MA133-12	Differential Equations	80	12.0	6.00
		Assessment	Weight	Mark	
		Examination - Summer (Weeks 4 to 9)	85%	77.00	
		Worksheet	15%	94.00	
21/22	MA137-24	Mathematical Analysis	78	24.0	12.00
		Assessment	Weight	Mark	
		Online Examination - January	25%	76.00	
		Examination - Summer (Weeks 4 to 9)	60%	73.00	
		Other	15%	100.00	
21/22	MA138-12	Sets and Numbers	71	12.0	6.00
		Assessment	Weight	Mark	
		Other	15%	97.00	
		Online Examination - January	85%	66.00	
21/22	MA1K2-0	Refresher Mathematics	84	0.0	0.00
		Assessment	Weight	Mark	
		Take Home Computer-Based Test	50%	75.00	
		Take Home Computer-Based Test	25%	100.00	
		Take Home Computer-Based Test	25%	85.00	
21/22	PX101-6	Quantum Phenomena	84	6.0	3.00
		Assessment	Weight	Mark	
		Examination - Summer (Weeks 4 to 9)	100%	84.00	
21/22	PX120-12	Electricity and Magnetism	88	12.0	6.00
		Assessment	Weight	Mark	
		Examination - Summer (Weeks 4 to 9)	100%	88.00	
21/22	PX129-12	Tutorial	98	12.0	6.00
		Assessment	Weight	Mark	
		Worksheet	100%	98.00	
21/22	PX145-12	Physics Foundations	79	12.0	6.00
		Assessment	Weight	Mark	
		Examination - Summer (Weeks 4 to 9)	100%	79.00	

21/22	PX147-6	Introduction to Particle Physics			86	6.0	3.00
		Assessment	Weight	Mark			
		Examination - Summer (Weeks 4 to 9)	100%	86.00			
21/22	PX148-12	Classical Mechanics & Special Relativity			84	12.0	6.00
		Assessment	Weight	Mark			
		Examination - Summer (Weeks 4 to 9)	100%	84.00			
21/22	PX150-6	Physics Programming Workshop			97	6.0	3.00
		Assessment	Weight	Mark			
		Other	100%	97.00			
21/22	ST111-6	Probability (Part A)			59	6.0	3.00
		Assessment	Weight	Mark			
		Examination - Summer (Weeks 4 to 9)	90%	55.00			
		Other	5%	90.00			
		Other	5%	100.00			
21/22	ST112-6	Probability (Part B)			62	6.0	3.00
		Assessment	Weight	Mark			
		Other	5%	90.00			
		Other	5%	100.00			
		Examination - Summer (Weeks 4 to 9)	90%	58.00			
TOTAL YEAR 21/22 CREDITS						150.0	75.00

Mathematics and Physics 22/23

Year	Module Code	Title			Mark %	Credits	ECTS Credits
22/23	MA209-6	Variational Principles			60	6.0	3.00
		Assessment	Weight	Mark			
		Examination - Summer (Weeks 4 to 9)	100%	60.00			
22/23	MA244-12	Analysis III			73	12.0	6.00
		Assessment	Weight	Mark			
		Worksheet	15%	93.00			
		Examination - April	85%	69.00			
22/23	MA250-12	Partial Differential Equations			81	12.0	6.00
		Assessment	Weight	Mark			
		Examination - Summer (Weeks 4 to 9)	100%	81.00			
22/23	MA259-12	Multivariable Calculus			68	12.0	6.00
		Assessment	Weight	Mark			
		Examination - April	85%	62.00			
		Worksheet	15%	100.00			
22/23	MA260-12	Norms, Metrics and Topologies			64	12.0	6.00
		Assessment	Weight	Mark			
		Examination - Summer (Weeks 4 to 9)	100%	64.00			
22/23	MA261-12	Differential Equations: Modelling and Numerics			100	12.0	6.00
		Assessment	Weight	Mark			
		Other	100%	100.00			
22/23	PX262-15	Quantum Mechanics and its Applications			82	15.0	7.50
		Assessment	Weight	Mark			
		Examination - Summer (Weeks 4 to 9)	85%	80.00			
		Other	15%	95.00			

22/23	PX263-7.5	Electromagnetic Theory and Optics			73	7.5	3.75
		Assessment	Weight	Mark			
		Examination - Summer (Weeks 4 to 9)	85%	68.00			
		Other	15%	98.00			
22/23	PX264-7.5	Physics of Fluids			69	7.5	3.75
		Assessment	Weight	Mark			
		Examination - Summer (Weeks 4 to 9)	100%	69.00			
22/23	PX265-7.5	Thermal Physics II			84	7.5	3.75
		Assessment	Weight	Mark			
		Other	15%	90.00			
		Examination - Summer (Weeks 4 to 9)	85%	83.00			
22/23	PX267-7.5	Hamiltonian Mechanics			67	7.5	3.75
		Assessment	Weight	Mark			
		Examination - Summer (Weeks 4 to 9)	100%	67.00			
22/23	PX276-7.5	Methods of Mathematical Physics			94	7.5	3.75
		Assessment	Weight	Mark			
		Examination - April	80%	92.00			
		Other	20%	100.00			
22/23	PX281-15	Computational Physics			99	15.0	7.50
		Assessment	Weight	Mark			
		Other	100%	99.00			
TOTAL YEAR 22/23 CREDITS						133.5	66.75

Mathematics and Physics 23/24

Year	Module Code	Title			Mark %	Credits	ECTS Credits
23/24	MA359-15	Measure Theory			75	15.0	7.50
		Assessment	Weight	Mark			
		Examination - April	85%	72.00			
		Worksheet	15%	93.00			
23/24	MA398-15	Matrix Analysis & Algorithms			72	15.0	7.50
		Assessment	Weight	Mark			
		Worksheet	15%	99.00			
		Examination - April	85%	67.00			
23/24	MA3D1-15	Fluid Dynamics			83	15.0	7.50
		Assessment	Weight	Mark			
		Examination - Summer (Weeks 4 to 9)	100%	83.00			
23/24	MA3H0-15	Numerical Analysis & PDE's			73	15.0	7.50
		Assessment	Weight	Mark			
		Examination - Summer (Weeks 4 to 9)	85%	68.00			
		Worksheet	15%	98.00			
23/24	MA3K1-15	Mathematics of Machine Learning			66	15.0	7.50
		Assessment	Weight	Mark			
		Worksheet	15%	100.00			
		Examination - Summer (Weeks 4 to 9)	85%	60.00			
23/24	PX390-15	Scientific Computing			87	15.0	7.50
		Assessment	Weight	Mark			
		Other	100%	87.00			

23/24	PX3A2-10	Quantum Physics of Atoms		79	10.0	5.00
		Assessment	Weight	Mark		
		Other	15%	94.00		
		Examination - April	85%	76.00		
23/24	PX3A3-10	Electrodynamics		74	10.0	5.00
		Assessment	Weight	Mark		
		Examination - Summer (Weeks 4 to 9)	85%	71.00		
		Other	15%	93.00		
23/24	PX442-15	Laboratory for Mathematics & Physics Students		75	15.0	7.50
		Assessment	Weight	Mark		
		Other	100%	75.00		
23/24	PX449-10	Kinetic Theory		64	10.0	5.00
		Assessment	Weight	Mark		
		Examination - Summer (Weeks 4 to 9)	100%	64.00		
TOTAL YEAR 23/24 CREDITS					135.0	67.50
TOTAL CREDITS AWARDED					418.5	209.25

4.4 Grading scheme and, if available, grade distribution guidance:

The following classes of degree are awarded at undergraduate level, see <http://go.warwick.ac.uk/assessmentconventions> for more information:

Classification	Normal Average Grade
First Class Honours	At least 70%
Second Class Honours (1st Division)	At least 60%
Second Class Honours (2nd Division)	At least 50%
Third Class Honours	At least 40%
Pass	At least 35%

4.5 Overall classification of the qualification (in original language):

First Class Honours

Section 5: Information on the function of the qualification

5.1 Access to further study:

This qualification may allow access to further study (at FHEQ level 7 or for equivalent EHEA second cycle qualifications) subject to individual requirements of the institution concerned.

5.2 Professional status (if applicable):

Not applicable

Section 6: Additional information

The University of Warwick has agreed a list of activities undertaken outside the academic curriculum that will be recorded in the HEAR. All activities recorded in this section have been verified by the University. This section also includes any departmental or University prizes won. Other activities and achievements not included in the HEAR, may be recorded in a CV or e-portfolio. Visit <http://www.warwick.ac.uk/hear> for a full list of activities.

Note: The HEAR was introduced at the University of Warwick at the beginning of the 2011/12 academic year, and therefore includes only information about activities undertaken and prizes awarded in the 2011/12 academic year or later.

6.1 Additional information:

2022/23

Undergraduate Research Support Scheme

The URSS enables students to experience academic research first-hand, develop a range of academic and transferable skills and gain experience in disseminating their research.

2023/24

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6.2 Further information sources:

The University of Warwick is one of the UK's leading universities, with an acknowledged reputation for excellence in research and teaching, for innovation, and for links with business and industry. Its mission is:

- To become a world leader in research and teaching
- Through research of international excellence, to increase significantly the range of human knowledge and understanding
- To equip graduates to make an important contribution to the economy and to society
- To serve our local region - academically, culturally and economically
- To continue to make a Warwick education available to all those able to benefit from it, regardless of economic or social circumstances.

Find out more at <http://www.warwick.ac.uk/about>.

Section 7: Certification of the HEAR

7.1 Date 02/07/2024

7.2 Signatory: Adam Child



7.3 Official capacity: Academic Registrar

7.4 Official stamp or seal



Section 8: Information on the national higher education system

Description of Higher Education in England, Wales and Northern Ireland

In England, Wales and Northern Ireland¹, higher education institutions are independent, self-governing bodies active in teaching, research and scholarship. They are established by Royal Charter or legislation and most are part-funded by government. Higher education (HE) is provided by many different types of institution. In addition to universities and university colleges, whose charters and statutes are made through the Privy Council which advises the Queen on the granting of Royal Charters and incorporation of universities, there are a number of publicly-designated and autonomous institutions within the higher education sector. Publicly funded higher education provision is available in some colleges of further education by the authority of another duly empowered institution. Teaching to prepare students for the award of higher education qualifications can be conducted in any higher education institution and in some further education colleges.

Degree awarding powers and the title 'university'

All universities and many higher education colleges have the legal power to develop their own courses and award their own degrees, as well as determine the conditions on which they are awarded. Some HE colleges and specialist institutions without these powers offer programmes, with varying extents of devolved authority, leading to the degrees of an institution which does have them. All universities in existence before 2005 have the power to award degrees on the basis of completion of taught courses and the power to award research degrees. From 2005, institutions in England and Wales that award only taught degrees ('first' and 'second cycle') and which meet certain numerical criteria, may also be permitted to use the title 'university'. Higher education institutions that award only taught degrees but which do not meet the numerical criteria may apply to use the title 'university college', although not all choose to do so. All of these institutions are subject to the same regulatory quality assurance and funding requirements as universities; and all institutions decide for themselves which students to admit and which staff to appoint. Degrees and other higher education qualifications are legally owned by the awarding institution, not by the state. The names of institutions with their own degree awarding powers ("Recognised Bodies") are available for download at: <http://www.bis.gov.uk/policies/higher-education/recognised-uk-degrees/recognised-bodies>

Higher education institutions, further education colleges and other organisations able to offer courses leading to a degree of a Recognised Body are listed by the English, Welsh and Northern Irish authorities, and are known as "Listed Bodies". View the list at: <http://www.bis.gov.uk/policies/higher-education/recognised-uk-degrees/listed-bodies>

Qualifications

The types of qualifications awarded by higher education institutions at sub-degree and undergraduate (first cycle) and postgraduate level (second and third cycles) are described in the Framework for Higher Education Qualifications in England, Wales and Northern Ireland (FHEQ). This also includes qualification descriptors that were developed with the HE sector by the Quality Assurance Agency for Higher Education (QAA - established in 1997 as an independent UK-wide body to monitor the standard of higher education provision - www.qaa.ac.uk). The FHEQ was self-certified as compatible with the Framework for Qualifications of the European Higher Education Area, the qualifications framework adopted as part of the Bologna Process, in February 2009. Foundation degrees, designed to create intermediate awards strongly oriented towards specific employment opportunities, were introduced in 2001. In terms of the European Higher Education Area they are "short cycle" qualifications within the first cycle. The FHEQ is one component of the Credit and Qualifications Framework for Wales (CQFW). The Qualifications and Curriculum Authority (QCA), the Department for Children, Education, Lifelong Learning and Skills, Wales (DCELLS) and the Council for Curriculum Examination and Assessment, Northern Ireland (CCEA)

have established the Qualifications and Credit Framework (to replace, in time, the National Qualifications Framework (NQF)). These authorities regulate a number of professional, statutory and other awarding bodies which control VET and general qualifications at all levels. The QCF is also incorporated into the CQFW. There is a close association between the levels of the FHEQ and the NQF (as shown overleaf), and other frameworks of the UK and Ireland (see 'Qualifications can cross Boundaries' <https://www.qaa.ac.uk/docs/qaa/quality-code/qualifications-can-cross-boundaries.pdf>)

Quality Assurance

Academic standards are established and maintained by higher education institutions themselves using an extensive and sophisticated range of shared quality assurance approaches and structures. Standards and quality in institutions are underpinned by the universal use of external examiners, a standard set of indicators and other reports, by the activities of the QAA, and in professional areas by relevant professional, statutory and regulatory bodies. This ensures that institutions meet national expectations described in the FHEQ: subject benchmark statements, the Code of Practice and programme specifications. QAA conducts peer-review based audits and reviews of higher education institutions with the opportunity for subject-based review as the need arises. The accuracy and adequacy of quality-related information published by the higher education institutions is also reviewed. QAA also reviews publicly funded higher education provision in further education colleges.

Credit System

Most higher education institutions in England and Northern Ireland belong to one of several credit consortia and some operate local credit accumulation and transfer systems for students moving between programmes and/or institutions. A framework of national guidelines, the Higher Education Credit Framework for England, was launched in 2008. Credit is also an integral part of the CQFW and the QCF. It may be possible for credit awarded in one framework to be recognised by education providers whose qualifications sit within a different framework. HE credit systems in use in England, Wales and Northern Ireland are compatible with the European Credit Transfer System (ECTS) for accumulation and transfers within the European Higher Education Area, and are used to recognise learning gained by students in institutions elsewhere in Europe.

Admissions

The most common qualification for entry to higher education is the General Certificate of Education at 'Advanced' (A) level. Other appropriate NQF level 3 qualifications and the kite-marked Access to HE Diploma may also provide entry to HE. Level 3 qualifications in the CQFW, including the Welsh Baccalaureate, also provide entry, as do Scottish Highers, Advanced Highers or qualifications at the same levels of the Scottish Credit and Qualifications Framework. Part-time and mature students may enter HE with these qualifications or alternatives with evidenced equivalent prior formal and/or experiential learning. Institutions will admit students whom they believe to have the potential to complete their programmes successfully.

¹ The UK has a system of devolved government, including for higher education, to Scotland, to Wales and to Northern Ireland. This description is approved by the High Level Policy Forum which includes representatives of the Department for Business, Innovation and Skills, the Scottish Government, the Welsh Assembly Government, the Higher Education Funding Councils for England, Scotland and Wales, the Quality Assurance Agency (QAA), Universities UK (UUK), GuildHE and the National Recognition Information Centre for the UK (UK NARIC)

Diagram of higher education qualification levels in England, Wales and Northern Ireland

