

University of the West of Scotland

Undergraduate Programme Specification

Session: 2024/25

Last Modified: 12/06/2024

Status: Published

1	Named Award Title:	BSc (Hons) Mathematics 2023 Single
2	Award Title for Each Award: ¹	BSc (Hons) Mathematics 2023 BSc Mathematics Dip HE Mathematics Cert HE Mathematics
3	Date of Validation / Approval:	June 2023
4	Details of Cohorts Applies to:	Any new students entering at L7, L8, or L9 in Session 2024/25 and any L7 or L8 students from Session 2023/24 continuing in/to L8 or L9 in Session 2024/25.
5	Awarding Institution/Body:	University of the West of Scotland
6	Teaching Institution(s)²:	University of the West of Scotland [click here to add detail]
7	Language of Instruction & Examination:	English
8	Award Accredited By:	
9a	Maximum Period of Registration:	8 years <u>Authorised Interruption Guidance notes (uws.ac.uk)</u>
9b	Duration of Study:	4 years
10	Mode of Study:	Full Time
11	Campus:	Paisley
12	School:	School of Computing, Engineering and Physical Sciences
13	Programme Board:	Physical Sciences
14	Programme Leader:	Dr Alan J. Walker

15. Admission Criteria

¹ Include main award and all exit awards e.g. BA / BSc / BEng / DipHE / CertHE

² University of the West of Scotland and include any collaborative partner institutions involved in delivery.

Candidates must be able to satisfy the general admission requirements of the University of the West of Scotland as specified in Chapter 2 of the University Regulatory Framework together with the following programme requirements:

SQA National Qualifications:

Year 1: HIGHERS: BCCC including Mathematics.

Year 2: ADVANCED HIGHERS: CCD including Mathematics.

or GCE

Year 1: A-LEVEL: CCD including Mathematics.

Year 2: A-LEVEL: BCC including Mathematics..

or SQA National Qualifications/Edexcel Foundation

Year 1: Relevant HNC, which includes Higher National Unit: Engineering Mathematics 1 (H7K0 33).

Year 2: Relevant HND, which includes Higher National Units: Engineering Mathematics 2 (H7K1 34) and Engineering Mathematics 3 (H7K2 34).

Other Required Qualifications/Experience

Year 1: Irish Leaving Certificate: H3H3H3H4 including Mathematics or International Baccalaureate (IB) Diploma: 24 points (including Mathematics).

Year 2: BTEC Extended Diploma: DDM, Scottish Baccalaureate in Science: Advanced entry to Year 2 will be dependent on subjects studied and grade of award or International Baccalaureate (IB) Diploma: 28 points including Mathematics.

Further desirable skills pre-application (i.e. to satisfy additional PSRB requirements or other)

A willingness to learn, engage, and work closely with academics and peers alike.

16	<p>General Overview</p> <p>Mathematics, known as the Queen of the Sciences, is concerned with the description and logic of shape, quantity, change, and arrangement. This BSc (Hons) Mathematics programme presents how mathematics underpins and describes the ever-changing world around us.</p> <p>This programme will provide a broad understanding of key areas of mathematics with options to individualise the content at the later levels. Further, it is designed to fulfil the requirements of the QAA subject benchmark statement for Mathematics, Statistics and Operational Research (MSOR) (2023) and takes cognizance of the Bond Review in 2018 (The Era of Mathematics).</p> <p>The overall aim of the programme is to develop individuals with a range of transferable graduate skills, who will acquire Honours-level knowledge and skills in Mathematics. Students electing to take the relevant options at Levels 9 and 10 will also acquire Honours-level knowledge and skills in Statistics.</p> <p>The programme offers the fundamentals of Mathematics and Statistics as core science. Presentations, group exercises and computer laboratory sessions develop applied practical and communication skills, preparing students for excelling in the 21st Century workplace.</p> <p>Across the four years of the programme, increasingly complex understanding of Mathematics and Statistics, viz. Algebra, Calculus, Probability & Statistics, is developed. At later stages in the programme, students choose to study topics from a range of options including statistics, number theory, numerical analysis, and mathematical biology.</p> <p>In accordance with the relevant benchmarks, graduates should be able to demonstrate:</p> <ul style="list-style-type: none"> • a sound understanding of the basic body of knowledge for the course of study including calculus and linear algebra; • the attainment of a suitable level of skill in calculation and manipulation within this basic body of knowledge and some capability to solve problems formulated within it; • the application of core concepts and principles in well-defined contexts, showing judgement in the selection and application of tools and techniques; • an understanding of logical arguments, identifying the assumptions made and the conclusions drawn; • a familiarity with the notion of mathematical modelling and the attainment of a suitable level of skill in comprehending problems, formulating them mathematically and obtaining solutions by appropriate methods; • an ability to communicate straightforward arguments and conclusions accurately and clearly; • competent use of appropriate computer technology, and; • the ability to manage their own learning and make use of appropriate resources. <p>The programme aims to consolidate and further develop, in students, a range of graduate skills and attributes that are transferable to other areas of study and professional employment. Transferable skills which graduates can expect to consolidate and further develop include knowing how to access and apply relevant research findings; communicating effectively with a range of audiences; engaging in professional dialogue with peers and senior colleagues; undertaking critical analysis, evaluation and synthesis of</p>
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ideas, concepts, information and issues; exercising autonomy and initiative; and working with others and taking a leading role. These are aligned with the UWS Graduate Attributes, which states that UWS graduates should be:

- universal - globally relevant with comprehensively applicable abilities, skills and behaviours;
- work ready - dynamic and prepared for employment in complex, ever-changing environments which require lifelong learning and resilience, and;
- successful - as a UWS graduate with a solid foundation on which to continue succeeding and realising (my) potential, across various contexts.

The programme will encourage the student to engage in lifelong learning, study, and enquiry and to appreciate the value of mathematics and statistics to society. It will also assist the student to develop the skills required for both autonomous practice and teamworking.

Following graduation from the BSc (Hons) Mathematics programme, graduates will leave UWS with the options to work in the finance, research, cyber security, and engineering industries, and much more.

Opportunities for further study

Honours graduates may choose to pursue further study of Mathematics and/or Statistics through Masters or Doctoral programmes at this or other universities. Further, graduates may choose to study for a Professional Graduate Diploma in Education (PGDE) Secondary, at this or other universities.

Teaching, learning and assessment

Formal lectures will be supported by a range of blended learning activities such as small group tutorials, workshops, computer laboratory classes and use of the Moodle and Aula Virtual Learning Environments (VLE).

These activities will employ a range of learning and teaching methodologies including group work, investigations, problem-based learning, student presentations and online tutor/student-led discussions. Resources such as industry-standard mathematical, computational and statistical software packages (e.g. Maxima, Python, SPSS and R), and interactive whiteboards, will be used, as appropriate, to develop student learning.

Students will share some modules with UWS students from a range of programmes, including, but not limited to, Mathematics with Education, Chemistry, the suite of Engineering programmes, Forensic Science, and the suite of Physics programmes.

Within the Moodle and Aula VLEs, students will experience a range of e-learning methods. They will be required to remotely access set and extension readings and other course materials, and communicate both online and asynchronously with peers, whilst being supported by tutors, to address learning tasks. Students are required to undertake and benefit from significant independent learning in each module. Student e-handbooks and other material made available to students will give more detailed information on the particular (combination of) learning and teaching methodologies that will be used for timetabled student sessions. This will clarify for students both their expectations for

	<p>scheduled sessions, and their expectations for the overall balance of learning and teaching methodologies to be used during the programme.</p> <p>Ongoing formative assessment across the programme will provide feedback to students on their developing thinking on subject knowledge and skills, and professional abilities. Summative assessment of academic study will take the form of class tests, written and numerical assignments, oral presentations, problem sheets, examinations, and a dissertation.</p> <p><u>Support and Guidance</u></p> <p>Student support and guidance is incredibly important. In addition to support provided by Programme Leaders, there are two key roles within the School's student support network: Personal Tutors and Year Leaders. They provide guidance and advice on a range of key matters such as (but not exclusively), health and wellbeing; funding; exams and assessment; study skills; attendance and engagement; and careers. Students may also be referred for specialist advice, to the central student support teams based on each campus at the Student Hub/Link.</p>
17	<p>Graduate Attributes, Employability & Personal Development Planning</p> <p>Graduate attributes are the skills and personal qualities to be developed in students through their university experience that will prepare for life and work in the 21st century.</p> <p>Apart from the subject knowledge and expertise developed on this programme, there are many skills, abilities and qualities that will help students beyond their university studies. These will be developed in students during their studies and will help prepare them for employment and contributing to society.</p> <p>The University of the West of Scotland strives to produce graduates who are UWS: that is, Universal, Work-ready (if not world-ready), and Successful. Further, the University seeks to instil, in students, personal attributes of Academic, Personal, and Professional. Particular permutations of these attributes can be seen in the University's documentation on "I am UWS" (https://www.uws.ac.uk/current-students/your-graduate-attributes/). Each module descriptor listed below considers these graduate attributes and relates them to the specific mathematical topics being discussed.</p> <p>Some specific examples where the programme is designed to develop students' range of skills and attributes that are transferable to other areas of study and professional employment are</p> <ul style="list-style-type: none"> • knowing how to access and apply relevant research findings; • practising in a range of professional contexts, which include a degree of unpredictability; • communicating effectively, both orally and in writing, with a range of audiences; • engaging in professional dialogue with peers and senior colleagues; • constructing and sustaining reasoned and coherent arguments about professional practices; • undertaking critical analysis, evaluation and synthesis of ideas, concepts, information and issues; • reflecting on, and acting to improve, the effectiveness of their own practice; • exercising autonomy and initiative in professional activities, and;

	<ul style="list-style-type: none"> • working with others and, at times, taking a leading role. <p>Personal Development Planning (PDP) is central to the programme, which aims to develop in every student the professional qualities and capabilities of a reflective practitioner.</p> <p>At Level 7, PDP/transferable skills development is an important part of the core modules Analysis of Data and Computational Methods. The aim is to enable students to become familiar with the ePortfolio that will be used, and to identify and evaluate their own range of skills and aspirations. Students will be encouraged to take ownership and capture evidence that will demonstrate distance travelled and career-readiness.</p> <p>In Levels 7 and 8, activities used for PDP/transferable skills development will be drawn from core module provision as well as ASPIRE, to ensure that there is a strong link between PDP and the curriculum. In all aspects of PDP, the emphasis will be on students taking personal responsibility for their PDP portfolio, with support from staff as appropriate at each level.</p> <p>Note that at Level 10, the PDP process is formally embedded within the Mathematics Project module. In this module, students will undertake a piece of original research or study a branch or area of mathematics or statistics unfamiliar to them. A dissertation will be written, and students will present their findings to staff and peers. Further, students will be asked to consider target setting and evaluation of their own work and will also be encouraged to reflect on personal and professional learning in academic work. The PDP process will culminate in the production of an Initial Professional Development Action Plan.</p>
18	<p>Work Based Learning/Placement Details</p> <p>The programme delivery team will provide students with opportunities to apply their mathematical and statistical knowledge and training in work-based contexts. These will be made available through a number of vehicles, including but not limited to:</p> <ul style="list-style-type: none"> • presentations from mathematics and statistics graduates currently working in a range of sectors; • application of mathematical and statistical theory to real-life data; • working with industry/business partners to seek solutions to contemporary work-related issues (specifically for Final Honours Projects); • supporting applications for summer work-related research placements within the University, and; • supporting the acquisition of summer placements with relevant employers.
19	<p>Attendance and Engagement</p> <p>In line with the <u>Student Attendance and Engagement Procedure</u>, Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the Library and on the VLE, and complete assessments and submit these on time.</p> <p>For the purposes of this programme, academic engagement equates to the following:</p>

	Meeting a minimum threshold of engagement on 75% of pre-determined engagement points, including submission of all summative assessments.
20	Equality and Diversity
	<p>The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code.</p> <p>Please detail any specific arrangements for this programme. This should be considered and not just refer the reader to the UWS Equality and Diversity policy.</p> <p>The programme is appropriate for all students irrespective of age, disability, gender and gender identity, race, ethnicity, religion or belief, or sexual orientation. To promote inclusive practice, procedures and processes have been subject to Equality Impact Assessment where appropriate.</p> <p>In line with the Equality Act 2010 and UWS Equality and Diversity Commitments, the School of Computing, Engineering & Physical Sciences encourages the disclosure of support requirements, including disability, at the recruitment stage and throughout the duration of the programme. Emphasis is placed on confidentiality of information, the benefits of disclosure, and that no detriment to progress will be experienced. The School will endeavour to make reasonable adjustments to teaching and learning approaches and arrangements for assessment, including in laboratory environments, where a student has disclosed specific requirements.</p>

Programme structures and requirements, SCQF level, term, module name and code, credits and awards ([Chapter 1, Regulatory Framework](#))

21	Learning Outcomes (Maximum of 5 per heading)
	<p>Outcomes should incorporate those applicable in the relevant QAA Benchmark statements.</p> <p>Please ensure that Learning Outcomes are appropriate for the level of study. Further information is available via SCQF: https://scqf.org.uk/support/support-for-educators-and-advisers/support-for-colleges-heis/ and a Level Descriptors tool is available (SCQF Level Descriptors Tool Scottish Credit and Qualifications Framework) and ensure appropriate cognisance of Chapter 1, Regulatory Framework. https://www.uws.ac.uk/media/6514/regulatory-framework-2023-2024.pdf</p>

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	SCQF LEVEL 7
	Learning Outcomes (Maximum of 5 per heading)
Knowledge and Understanding	
A1	Demonstrate a broad knowledge of fundamentals of algebra, calculus, and statistics

A2	Relate knowledge to mathematical and statistical theories, concepts and principles
A3	
A4	
A5	
Practice - Applied Knowledge and Understanding	
B1	Apply basic knowledge and skills in solving routine problems in mathematics and statistics
B2	Apply basic knowledge and skills in solving investigation-type problems in mathematics and statistics
B3	
B4	
B5	
Communication, ICT and Numeracy Skills	
C1	Use software to tackle a range of numerical and non-numerical problems in theoretical and applicable situations
C2	Present information in a variety of forms relevant to the context
C3	Obtain information and data from standard sources
C4	
C5	
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Present and evaluate information and ideas in mathematical and statistical problems
D2	Use a range of approaches to the solution of routine problems
D3	
D4	
D5	
Autonomy, Accountability and Working With Others	

E1	Exercise some initiative in and take responsibility for defined activities
E2	Work with others in defined group exercises
E3	
E4	
E5	

Learning Outcomes - Level 7 Core Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
7	MATH07001	Analysis of Data	20		X		
7	APPD07001	ASPIRE	20	X			
7	MATH07011	Applied Mathematics *	20	X			Replacing MATH07003
7	MATH07008	Computational Methods	20		X		
7	MATH07002	Discrete Mathematics 1	20	X			
7	MATH07009	Mathematical Analysis	20		X		Previously known as Calculus B / Mathematics of Space and Change 2

Footnotes for Core Modules:

* Indicates that module descriptor is not published.

Learning Outcomes - Level 7 Optional Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	

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Footnotes for option modules

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22 a	Level 7 Criteria for Progression and Award
	<p>Progression to SCQF Level 8 is available to students who fulfil the University progression requirements and who have obtained at least a C pass in each of the core modules at SCQF 7.</p> <p>In line with the Regulatory Framework, for the award of Cert HE, at least 120 credit points must be achieved of which a minimum of 120 are at SCQF Level 7 or above.</p> <p>A student may exit with a Cert HE Physical Sciences, with:</p> <ul style="list-style-type: none"> • a minimum of 120 credit points achieved at Level 7 or above, and; • at least 80 credit points are achieved from any CHEM/FORS/MATH/PHYS modules. <p>Distinction will be awarded in line with University Regulations and no imported credit can be used. (Regulations 3.35 & 3.26)</p> <p>Links: UWS Regulatory Framework; and Student Experience Policy Statement.</p>

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	Level 8 Learning Outcomes (Maximum of 5 per heading)
Knowledge and Understanding	
A1	Demonstrate a broad knowledge of main areas of mathematics and/or statistics
A2	Display an understanding of some major core theories and principles of mathematics and/or statistics
A3	Demonstrate specialist knowledge and understanding of some important mathematical and/or statistical concepts that underpin issues in classical and contemporary problems
A4	

A5	
Practice - Applied Knowledge and Understanding	
B1	Use a range of routine skills, techniques and practices in mathematics and/or statistics, including some advanced aspects
B2	Carry out routine investigations into practical and theoretical issues
B3	Present information gained through non-routine investigations which demonstrates knowledge and understanding of some classical and contemporary mathematical and/or statistical problems
B4	
B5	
Communication, ICT and Numeracy Skills	
C1	Use a range of specialist statistical software packages to process and analyse data and perform statistical predictions based on analysis
C2	Use mathematical software to extend the analysis of non-routine problems to those requiring numerical methods
C3	Present information in numerical, graphical, verbal and written forms to a variety of audiences
C4	
C5	
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Undertake critical analysis, evaluation and synthesis of information related to the main ideas and concepts within the understanding and practice of mathematics and/or statistics
D2	Use a variety of approaches to develop solutions to defined problems in classical and contemporary problems in mathematics and/or statistics
D3	Display a critical evaluation of solutions and explanations of output from a range of analytical and numerical techniques
D4	
D5	
Autonomy, Accountability and Working With Others	
E1	Exercise autonomy and initiative in defined academic and professional activities

E2	Take responsibility for work planning and time management within specified contexts
E3	Co-operate in group working exercises
E4	
E5	

Learning Outcomes - Level 8 Core Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
8	APPD08001	ASPIRE 2	20		X		
8	MATH08002	Differential Equations 1	20		X		
8	MATH08007	Linear Algebra	20	X			
8	MATH08008	Multivariable Calculus	20	X			
8	MATH08006	Discrete Mathematics 2	20		X		
8	MATH08010	Probability and Statistics	20	X			

Footnotes for Core Modules:

Learning Outcomes - Level 8 Optional Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	

Footnotes for option modules

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X

22b	Level 8 Criteria for Progression and Award
	<p>Progression to SCQF Level 9 is available to students who fulfil the University progression requirements and who have obtained at least a C pass in each of the core modules at SCQF 8.</p> <p>In line with the Regulatory Framework, for the award of Dip HE in Mathematics, at least 240 credit points must be achieved of which a minimum of 100 are at SCQF Level 8 and none less than SCQF Level 7.</p> <p>A student may exit with a Dip HE Physical Sciences, with:</p> <ul style="list-style-type: none"> • a minimum of 240 credit points, where; • at least 100 credit points are achieved at Level 8 or above, and; • at least 80 credit points are achieved from any CHEM/FORS/MATH/PHYS modules at Level 7 and Level 8. <p>Distinction will be awarded in line with University Regulations and no imported credit can be used. (Regulations 3.35 & 3.26)</p> <p>Links: UWS Regulatory Framework; and Student Experience Policy Statement.</p>

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	SCQF LEVEL 9 Learning Outcomes (Maximum of 5 per heading)
Knowledge and Understanding	
A1	Demonstrate a broad and integrated knowledge and understanding of major aspects of mathematics and/or statistics
A2	Display a critical understanding of principal theories, principles, concepts and terminologies of mathematics and/or statistics
A3	Show a knowledge of specialisms in calculus, plus at least four other chosen specialist areas in pure and applied mathematics and statistics
A4	
A5	

Practice - Applied Knowledge and Understanding	
B1	Use a selection of skills, techniques and practices in the analysis of problems in mathematics and/or statistics
B2	Display skills in techniques, practices and information at a specialised level in mathematics and/or statistics
B3	Practise routine and more unpredictable investigations and enquiries in mathematics and/or statistics
B4	
B5	
Communication, ICT and Numeracy Skills	
C1	Use suitable mathematical and/or statistical software to analyse data at a specialised level and make, and communicate, effective conclusions and recommendations
C2	Communicate effectively, using a variety of media including digital technologies, and engage in professional dialogue with peers and university staff
C3	Communicate and report effectively, both orally and in writing
C4	
C5	
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Undertake critical analysis, evaluation and synthesis of ideas, concepts, information and issues in mathematics and/or statistics
D2	Identify and analyse routine professional problems and issues in mathematics and/or statistics
D3	Draw on a range of sources in making judgments on matters relating to mathematics and/or statistics
D4	
D5	
Autonomy, Accountability and Working With Others	
E1	Exercise autonomy and initiative in dealing with activities at a professional level in mathematics and/or statistics
E2	Take some responsibility for the work of others and for the use of resources
E3	Practise working in group exercises taking account of others' roles and responsibilities

E4	
E5	

Learning Outcomes - Level 9 Core Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
9	MATH09002	Differential Equations 2	20	X			

Footnotes for Core Modules:

Learning Outcomes - Level 9 Optional Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
9	MATH09013	Abstract Algebra	20		X		
9	MATH09009	Complex Analysis	20	X			
8	PHYS08007	Classical Mechanics	20	X			1

9	MATH09014	Numerical Analysis 1	20	X			
9	MATH09011	Numerical Analysis 2	20		X		2
9	MATH09012	Statistical Estimation and Inference	20		X		
		Any other L8/L9/L10 module.					

Footnotes for option modules

1. PHYS coded Level 8 Module (suitable level and content for Mathematics students)
2. Should choose Numerical Analysis in T1 to take this option.

The programme descriptor states that candidates may choose either five MATH-coded optional modules, or four MATH-coded optional modules and one optional module from outside their discipline (at Level 8, 9 or 10) in Year 3. PHYS08007 is appropriately mathematical to count as MATH for these purposes. The optional module can be chosen from any discipline; assuming that timetabling arrangements are suitable, and any pre-requisites have been met.

22c	Level 9 Criteria for Progression and Award
	<p>Progression to SCQF Level 10 is available to students who fulfil the University progression requirements and who have obtained at least a C pass in each of the core modules at SCQF 9.</p> <p>In line with University Regulation 3.15, students may exit with a BSc Mathematics, with a minimum of 360 credit points, where at least 100 credit points are achieved at Level 9 or above, and where all Core Level 7, 8 and 9 modules have been passed at grade C or above (Regulation 3.15). Distinction will be awarded in line with Regulations 3.25-3.26.</p> <p>A student may exit with a BSc Physical Sciences, with:</p> <ul style="list-style-type: none"> • a minimum of 360 credit points, where; • at least 100 credit points are achieved at Level 9 or above, and; • at least 80 credit points are achieved from CHEM/FORS/MATH/PHYS modules at every level. <p>Distinction will be awarded in line with University Regulations and no imported credit can be used. (Regulations 3.35 & 3.26)</p> <p>Links: UWS Regulatory Framework; and Student Experience Policy Statement.</p>

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SCQF LEVEL 10 Learning Outcomes (Maximum of 5 per heading)	
Knowledge and Understanding	
A1	Demonstrate integrated knowledge and critical understanding of a broad range of facts, concepts, principles and theories relating to main branches of mathematics and/or statistics
A2	Show knowledge of specialist topics in major areas of mathematics and/or statistics, with awareness of significant issues at the frontiers of the application of statistics in today's society
A3	Demonstrate understanding of classical mathematics topics in the field of partial differential equations and their applications in today's world
A4	Demonstrate knowledge of how to access and apply relevant findings from mathematics and/or statistics
A5	
Practice - Applied Knowledge and Understanding	
B1	Exhibit practical skills in classical and contemporary applications of mathematics and/or statistics, particularly in real-life situations
B2	Construct and implement experimental design, and statistically analyse corresponding complex data associated with modern issues, providing recommendations based on findings
B3	Execute a defined project of research, development or investigation
B4	
B5	
Communication, ICT and Numeracy Skills	
C1	Communicate effectively and engage in professional dialogue with peers, university staff and school colleagues
C2	Implement specialist statistical software for the analysis of complex data associated with problems in today's society
C3	Communicate and report effectively, both orally and in writing, to a wide range of audiences, including learners, and the wider community
C4	
C5	

Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Undertake critical analysis, evaluation and synthesis of ideas, concepts, information and issues in mathematics and/or statistics
D2	Justify a personal stance on issues in mathematics and/or statistics by referring to appropriate evidence from a range of sources
D3	Develop record of personal professional learning and development into an Initial Professional Development Action Plan
D4	
D5	
Autonomy, Accountability and Working With Others	
E1	Exercise autonomy and initiative in academic and professional activities, including managing time and prioritising workloads
E2	Work effectively with others and, at times, take a leading role in bringing about change, development and new thinking relating to an aspect of mathematics and/or statistics
E3	Work, under guidance, in a peer relationship with specialist practitioners
E4	
E5	

Learning Outcomes - Level 10 Core Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
10	MATH10011	Mathematics Project	40	X	X		
10	MATH10003	Partial Differential Equations	20		X		

Footnotes for Core Modules:

Learning Outcomes - Level 10 Optional Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
10	MATH10009	Number Theory and its Applications	20		X		
10	MATH10010	Mathematical Biology	20	X			
10	MATH10008	Regression Methods and Experimental Design	20	X			
		Any other L8/L9/L10 Module					

Footnotes for option modules

The programme descriptor states that candidates may choose either three MATH-coded optional modules, or two MATH-coded optional modules and one optional module from outside their discipline in Year 4. This optional module can be chosen from any discipline (at Level 8, 9 or 10); assuming that timetabling arrangements are suitable, and any pre-requisites have been met.

22d	Level 10 Criteria for Award (<i>normal UG – delete as applicable</i>) OR Criteria for Progression and Award (<i>Integrated Masters Only – delete as applicable</i>)
	<p>Honours degrees are classified in accordance with University Regulation 3.21.</p> <p>In line with University Regulation 3.15, students who complete a minimum of 480 credit points, with at least 100 credit points from Level 10, and where all Core modules have been passed at grade C or above, will exit with BSc (Hons) Mathematics.</p> <p>A student may exit with a BSc (Hons) Physical Sciences, with:</p> <ul style="list-style-type: none"> a minimum of 480 credit points, where;

	<ul style="list-style-type: none"> at least 100 credit points are achieved at Level 10 or above, and; at least 80 credit points are achieved from CHEM/FORS/MATH/PHYS modules at every level. <p>Links: UWS Regulatory Framework; and Student Experience Policy Statement.</p>
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23	Regulations of Assessment
<p>Candidates will be bound by the general assessment regulations of the University as specified in the University Regulatory Framework .</p> <p>An overview of the assessment details is provided in the Student Handbook and the assessment criteria for each module is provided in the module descriptor which forms part of the module pack issued to students. For further details on assessment please refer to Chapter 3 of the Regulatory Framework.</p> <p>To qualify for an award of the University, students must complete all the programme requirements and must meet the credit minima detailed in Chapter 1 of the Regulatory Framework.</p>	

24	Combined Studies
<p>There may be instances where a student has been unsuccessful in meeting the award criteria for the named award and for other more generic named awards existing within the School. Provided that they have met the credit requirements in line with the SCQF credit minima (please see Regulation 1.21), they will be eligible for a Combined Studies award (please see Regulation 1.61).</p> <p>For students studying BA, BAcc, or BD awards the award will be BA Combined Studies.</p> <p>For students studying BEng or BSc awards, the award will be BSc Combined Studies.</p>	

Change/Version Control

Changes made to the programme since it was last published:

What	When	Who
<p><u>Updated Links:</u></p> <ul style="list-style-type: none"> Academic Engagement Procedure Equality and Diversity University Regulatory Framework 	19/10/2023	C Winter

• Removed invalid links		
Guidance Note 2023-24 provided	12/12/23	D Taylor
General housekeeping to text across sections and addition of links and some specific guidance. Addition of Duration of Study and some other text – for CMA.	12/12/23	D Taylor
Level 9 ASPIRE removed Sequences and Patterns is now Discrete Mathematics 1 Calculus A is now Applied Mathematics Calculus B is now Mathematical Analysis IT Skills & Mathematical Software is now Computational Methods Differential Equations is now Differential Equations 1 Discrete Mathematics is now Discrete Mathematics 2 Numerical Analysis moved to Level 9 Classical Mechanics is now an option at Level 9 Advanced Calculus is now Differential Equations 2 Coding and Cryptography is now Number Theory and its Applications	22/03/2024	R Meeten
Minor amendments to cohorts affected and Entry requirements Minor amendments to Terms of delivery for some modules	13/06/2024	A Walker

Version Number: 1.06