University of the West of Scotland
Undergraduate Programme Specification

Session: 2023/24

Named Award Title:	**BSc (Hons) Forensic Science (Sandwich available) 2023 Single**
Award Title for Each Award:	**BSc (Hons) Forensic Science (Sandwich available) 2023** **BSc Forensic Science** **Dip HE Forensic Science** **Cert HE Forensic Science**
Date of Validation:	Not Applicable
Details of Cohorts Applies to:	Any new students entering at L7 or L8 in Session 2023/24 and any L7 students from Session 2022/23 continuing to L8 in Session 2023/24

Awarding Institution/Body:	University of the West of Scotland
Teaching Institution:	University of the West of Scotland
Language of Instruction & Examination:	English
Award Accredited By:	Graduates of the BSc (Hons) Forensic Science are eligible to apply for Associate Membership of the Royal Society of Chemistry (AMRSC), Successful application is dependent on subject selection within degree.
Maximum Period of Registration:	8
Mode of Study:	Full Time
Campus:	Paisley
School:	School of Computing, Engineering and Physical Sciences
Programme Board	Physical Sciences
Programme Leader:	Dr Ciaran T Ewins

Admission Criteria
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 BBBC including Chemistry plus English and Mathematics at Standard Grade (Grade 3 or above)/Intermediate 2/National 5.

Year 2: ADVANCED HIGHERS: BBC including Chemistry and either Biology or Human Biology plus English and Mathematics at Standard Grade (Grade 3 or above)/Intermediate 2/National 5.

Applicants with the Scottish Baccalaureate qualification in Science may be considered for Year 2 entry.

or GCE
A-Level

Year 1 CDD, including Chemistry plus English and Maths @ GCSE.

Year 2 A-Level BBC including Chemistry plus GCSE (Grade C or above) English and Mathematics.

or SQA National Qualifications/Edexcel Foundation
Year 1: Access to Science - BBB including Chemistry
An appropriate HNC/HND award with the level of entry and/or credit awarded being subject to the content of the HN programme.

Other Required Qualifications/Experience
Year 1: Irish Leaving Certificate: H3H3H3H4 including Chemistry or International Baccalaureate (IB) Diploma: 27 points including Chemistry

Year 2: International Baccalaureate (IB) Diploma: 30 points (including Biology or Human Biology and Chemistry at Higher and 3 other subjects at Higher)
* Science subjects: Psycholgy, Maths, Geography, Chemistry, Physics, Biology, Human Biology

Further desirable skills pre-application

General Overview
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Forensic Science is the application of Science in support of the legal process. Forensic Scientists aim to gather evidence and analyse it for use in a court of law in a way that is impartial, expert and based on a solid scientific basis. The great strides made in analytical chemistry and genetics in recent years have greatly increased the power of Forensic Science, and made the scientist central to the solving of many criminal cases. The scope of what can be achieved by Forensic Scientists is growing all the time with techniques such as DNA profiling being introduced and developed.
The programme provides the students with the requisite underpinning knowledge in the chemical and biological sciences that are most important in forensic science. Criminalistic topics such as crime scene investigation, forensic statistics and fingerprinting are also studied in the first two years. In year 3 and 4 the treatment and analysis of evidence is developed in specialist modules covering fire investigation, explosives, fibre analysis, DNA profiling, chemical and biochemical analysis, evidence identification, toxicology and drugs. In the final year of the programme features an extended research project and modules in Forensic Biology, Toxicology and Physical Evidence and Advanced Analytical Chemistry. Final year students also participate in an extended CSI project and present their findings in a mock court room.
A variety of teaching methods will be employed during the programme including site visits, guest lectures, workshops, role-play and presentations. One of the key tenets of the programme is to train and develop students as practical scientists with highly developed analytical skills capable of examining evidence, extracting information and presenting their findings both orally and in writing.
A key strength of this programme is that it will provide students with a broad grounding in a number of scientific disciplines that should allow graduates from the programme to find employment not only in the forensic sciences sector but also to have an analytical skills profile which makes them attractive to many other employers e.g. chemical, pharmaceutical and biotechnology industries, occupational safety and health sector, accident investigation, public sector employers and police graduate entry.
The programme includes an optional industrial placement which allows the development of additional skills relevant to employment.
Students with an Honours degree may proceed to postgraduate studies for MSc / PhD at this or other universities.
Forensic Science covers a wide variety of theoretical, conceptual and practical areas, and requires its practitioners to display and exercise a range of knowledge and skills. Delivery of the programme therefore involves a diversity of teaching and assessment methods appropriate to the learning outcomes of the modules and of the overall programme, as indicated below:- • Lectures are used to present, discuss and evaluate subject matter and content. • Tutorial work is closely integrated with the lecture material,

and generally requires students to solve problems or otherwise to develop understanding of the materials presented. • Investigations and case studies require students to gather, organise and evaluate numerical or non-numerical information, either individually or on a group basis (the latter specifically designed to develop team work skills). Several modules involve an element of practical work, to develop laboratory skills, to familiarise students with modern instrumentation, experimental techniques and to enhance investigative, evaluative and presentational skills. Assignments, investigations, laboratory results and other coursework require presentation in a variety of forms, developing skills in oral and written presentation and in the application of various forms of IT. The level and intensity of the programme is developed throughout the course in line with SCQF criteria for each level, while the content is closely aligned with QAA subject benchmark statements at all stages. Student autonomy and individual responsibility for learning is encouraged at all levels, and graduate attributes are developed throughout the programme.

Graduate Attributes, Employability & Personal Development Planning

Graduate attributes, employability and Personal Development Planning (PDP) are embedded in modules at all levels of the programme. The aim of this structure is to year on year develop attributes appropriate to the level of study and to monitor and record progress via an ePortfolio.
Exercises used for PDP and transferable skills are generally drawn from mainstream modular provision, to ensure that there is a strong link with 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.
A variety of sources have been used to inform this content; the UWS Graduate Attributes "I am UWS", SCQF Level Descriptors and the QAA Subject Benchmark Statement for Forensic Science (2012).
The UWS framework for graduate attributes is called "I am UWS", it states that as a graduate from UWS students will 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
Successful - as a UWS graduate with a solid foundation on which to continue succeeding and realising my potential, across various contexts
And that through studying and graduating from UWS, students will develop attributes across three dimensions:
Academic – knowledge, skills and abilities related to high-level academic study
Personal – qualities and characteristics of well-rounded, developed, responsible individuals
Professional – skills, aptitudes and attitudes required for professional working life in the 21st Century
Opportunities to develop transferable skills and graduate attributes are embedded in modules throughout the Forensic Science programme. Details can be found in individual module descriptors.

Level 7	Term 1	Structure of Chemistry
	Term 1	Science and Crime
	Term 2	Chemistry and Reactions
	Term 1 and 2	Aspire
Level 8	Term 1	Aspire 2
	Term 2	Chemical Analysis & Evaluation
	Term 2	Crime Scene Investigation
Level 9	Term 1	Analytical Chemistry
	Term 2	Forensic Quality Management
	Term 2	Aspire 3
Level 10	Term 1& 2	Science Project
	Term 2	Forensic Evidence

Students are introduced to the concept of PDP in Level 7 and supported to make use of the Royal Society of Chemistry Undergraduate Skills Record to record their ePortfolio at intervals during each year of study.

Work Based Learning/Placement Details

If selected, the sandwich placement is designed for students to gain and reflect on work experience attained during their time in the workplace. The experience may also contribute towards meeting the

membership requirements of a Professional body. Students undertaking a sandwich placement are required to undertake PDP and maintain a portfolio from which they will be required to produce a comprehensive learning log report charting their development during placement. This is assessed on a pass /fail basis only with the majority of ongoing assessment being formative in nature. The student will be required, through reflection, to explore their own role within their placement organisation and to take account of the roles and responsibilities of themselves and others in the context of the structures in which they operate. On successful completion of the placement, the learner will be more employable as a result of having developed their ability to integrate essential generic skills and attributes with subject/discipline related knowledge.

The placement will be governed by a tripartite learning agreement between the student, placement provider and the University which defines the learning outcomes and confirms elements of support and commitment from all parties. The agreement will be signed by each party prior to the start of the placement and it is expected that Schools will continue to use their existing placement systems for the management of such agreements.

Learning Outcomes

At the end of the placement the student will be able to:

- L1.Critically relate elements of the placement work experience to the main themes and issues of academic study of [subject discipline] relevant within the workplace and be confident in articulating this to others
- L2. Analyse organisational cultures and structures with particular relevance to the current workplace and exhibit the ability to critically evaluate employee roles in an applied setting.
- L3. Recognise, critically assess and be able to clearly demonstrate to others the personal development and application of essential employability skills and attributes within a real work situation.

Assessment

Assessment will be based on pass/fail only and all assessment elements must be passed for progression as part of the Sandwich programme. Assignments will be open to external examination in accordance with University regulations.

In order to submit for assessment students need to:

- Attend the workplace(s) in which they have been placed for a minimum total of 36 weeks (180 full working days) and have their employer(s) confirm their attendance
- Receive a satisfactory assessment of work performance from their workplace supervisor(s) and academic tutor (based on two interviews and other evidence as required)
- Maintain a PDP portfolio and use this to submit a satisfactory learning log report reflecting on the placement experience (minimum 2,000 words)
- Successfully complete a subject related project (minimum 3,000 words or equivalent)

Where a student's sandwich placement is made up of two separate planned periods of work experience (i.e. a "Thin Sandwich"), the PDP portfolio report and subject related report will normally be submitted and assessed during the second period of placement. Assessment of the first period of placement will relate to satisfactory performance in the workplace.

Mitigating circumstances will be taken into consideration in accordance with University regulations.

Reassessment

- Minimum period in work: It is essential that the student completes at least 36 weeks (180 working days) in employment. If the student does not meet this minimum requirement then they cannot pass the placement.
- Catch up: Where through no fault of their own a student has been unable to attain at least 36 weeks placement experience they will be entitled to secure the additional work experience required through a suitable additional period of work experience provided this is agreed in advance with the Programme Team.
- Retake of Placement: a repeat or alternative placement will only be considered on health or other mitigating grounds or where the placement is terminated due to no fault of the student. In such cases the student will receive counselling from the placement tutor on how best to proceed.
- Satisfactory Performance: The first interview will be used to assess the student's progress. If it is considered that the student's performance is less than expected at that stage, the student will be advised of this and of the elements of their performance that need to improve. If the student's performance is assessed as unsatisfactory at the second interview then the student will be given further advice on the steps they need to take to achieve a satisfactory assessment and will be reassessed through a third interview at the end of their placement period. Interviews will normally be conducted within the workplace unless a suitable alternative method is agreed by all parties.

• Reflective Report from PDP: If the reflective report is unsatisfactory, the student will be given the opportunity to resubmit in line with University regulations • Subject related report: If the subject related report is unsatisfactory the student will be given the opportunity to resubmit in line with University regulations **Progression/Award** • Placement students will be assigned to a specific Subject and Programme Panel. • The relevant Programme Panel will consider the performance of each sandwich placement student enrolled on that Programme and decide eligibility for reassessment, progression and awards in accordance with University Regulations, in particular Regulation 7.10.4 • A student who fails the sandwich placement after reassessment will no longer be eligible for a "with sandwich" award. They will either progress to level 9 or 10 (as appropriate) of a non-sandwich equivalent programme or exit with an equivalent non-sandwich award. Successful completion of the placement element will result in the award of Forensic Science (sandwich).
Engagement
In line with the Academic Engagement Procedure, 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 relevant learning platform, and complete assessments and submit these on time.
Equality and Diversity
Further information on the institutional approach to Equality, Diversity and Inclusion can be accessed at the following link: https://www.uws.ac.uk/about-uws/uws-commitments/equality-diversity-inclusion/

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

A. Learning Outcomes (Maximum of 5 per heading)

Outcomes should incorporate those applicable in the relevant QAA Benchmark statements

Knowledge and Understanding	
A1	Demonstrate a broad knowledge of chemical and biological sciences
A2	Relate scientific knowledge to a forensic science context
A3	Show familiarity with some of the routine materials, techniques and practices of Forensic Science.
Practice - Applied Knowledge and Understanding	
B1	Apply basic knowledge and skills to routine problems in Chemical and Biological sciences.
B2	Demonstrate the practice of basic laboratory skills
B3	Demonstrate skills for the gathering and basic analysis of routine information, ideas, concepts and quantitative and qualitative data within a clearly defined context. This will include the use of information and communications technology (ICT).
Communication, ICT and Numeracy Skills	

C1	Tackle a range of numerical and non-numerical problems in theoretical and practical situations
C2	Present information in a variety of forms relevant to context
C3	Demonstrate skills for the gathering and basic analysis of routine information, ideas, concepts and quantitative and qualitative data within a clearly defined context. This will include the use of information and communications technology (ICT).
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Present and evaluate information and ideas in the handling of scientific issues including specifically forensic applications
D2	Use a range of approaches to the solution of routine problems
Autonomy, Accountability and Working With Others	
E1	Exercise some initiative and take responsibility for defined activities
E2	Undertake practical work and further learning within a structured and managed environment
E3	Work with others in defined group exercises

Core Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
7	APPD07001	ASPIRE	20	✓	✓		
7	CHEM07011	Chemistry & Reactions	20		✓		
7	MATH07001	Dealing with Data	20	✓			
7	CHEM07013	Molecules of Life	20		✓		
7	CHEM07006	Science & Crime	20	✓			
7	CHEM07003	Structure of Chemistry	20	✓			

* Indicates that module descriptor is not published.

Footnotes

Optional Modules

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

* Indicates that module descriptor is not published.

Footnotes

Criteria for Progression and Award

A Certificate in Higher Education Science may be awarded in accordance with University regulations. (At least 120 credits are required of which a minimum of 100 are at least SCQF level 7).

Progression to SCQF 8 is subject to academic advice, module prerequisites and timetable constraints.

B. Learning Outcomes (Maximum of 5 per heading)

Outcomes should incorporate those applicable in the relevant QAA Benchmark statements

Knowledge and Understanding	
A1	Demonstrate a broad knowledge of aspects of chemistry, biology and criminalistics related to forensic science
A2	Display a knowledge of some major principles in chemical and biological science
A3	Show some knowledge of major current issues in forensic science
Practice - Applied Knowledge and Understanding	
B1	Use a range of routine skills, techniques and practices in science
B2	Carry out routine investigations into practical and theoretical issues
Communication, ICT and Numeracy Skills	
C1	Use a range of standard applications to obtain and process data
C2	Apply and evaluate numerical and graphical procedures to laboratory and other data
C3	Present numerical, graphical and verbal information in a variety of forms suitable for scientific and non-scientific audiences
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Undertake critical analysis, evaluation and synthesis of information relating to the main ideas and concepts relevant to forensic science
D2	Use a variety of approaches to develop solutions to defined problems
D3	Display a critical evaluation of solutions and explanations of experimental information and observations
Autonomy, Accountability and Working With Others	
E1	Exercise autonomy and initiative in defined professional activities
E2	Take responsibility for work planning and time management within specified contexts
E3	Co-operate in group working exercises

E4	Work under guidance on current professional practice and issues

Core Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
8	CHEM08004	Chemical Analysis & Evaluation	20		✓		
8		Crime Scene Investigation *	10	✓			
8	CHEM08017	Forensic Genetics	20		✓		
8		Forensic Statistics *	10		✓		
8	CHEM08002	Organic Chemistry 2	20	✓			
8	CHEM08001	Physical Chemistry 2	20	✓			

* Indicates that module descriptor is not published.

Footnotes

Optional Modules

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

* Indicates that module descriptor is not published.

Footnotes

Criteria for Progression and Award

A Diploma in Higher Education Science may be awarded in accordance with University regulations. (At least 240 credits are required of which a minimum of 100 are at least SCQF level 8).

C. Learning Outcomes (Maximum of 5 per heading)

Outcomes should incorporate those applicable in the relevant QAA Benchmark statements

Knowledge and Understanding	
A1	Demonstrate a broad and integrated knowledge and understanding of major areas relevant to forensic science
A2	Display a critical understanding of some principal theories, concepts and terminologies relevant to forensic science, and of the ways in which these are developed through progress in science
A3	Show a broad and comparative knowledge of the general scope of Forensic Science and a knowledge of how the legal context affects the work of the forensic scientists.
Practice - Applied Knowledge and Understanding	

B1	Use a selection of skills, techniques and practices in handling scientific concepts and experimental information
B2	Display skills in selected techniques, practices and information at a specialised level
B3	Use their knowledge, understanding and applied skills, to identify and analyse problems and issues in formulating, evaluating and applying evidence-based enquiries.
Communication, ICT and Numeracy Skills	
C1	Make formal and informal presentations on topics relevant to forensic science by a variety of methods to a range of audiences
C2	Use a range of IT applications to obtain and manage information and to gather, process and present experimental data
C3	Display the utilisation of a range of sources in making judgments on matters relating to forensic science
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Undertake critical analysis, evaluation and synthesis of ideas, concepts, information and issues in forensic science
D2	Identify and analyse routine professional problems and issues in forensic science
D3	Make use of a range of sources in making judgments on matters relating to forensic science
Autonomy, Accountability and Working With Others	
E1	Exercise some autonomy and initiative in dealing with activities at a professional level
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	Work under guidance on aspects of professional skills and ethical codes

Core Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
9	APPD09001	ASPIRE 3 *	20	✓	✓		
9	CHEM09008	Trace Evidence & Microscopy	20	✓			
9		Forensic Quality Management *	10	✓			
9	CHEM09024	Forensic Toxicology	20	✓			
9		Forensic Techniques *	10		✓		
9	CHEM09011	Fires & Explosives	20		✓		

9	CHEM09002	Analytical Chemistry	20		✓		

* Indicates that module descriptor is not published.

Footnotes

Optional Modules

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

* Indicates that module descriptor is not published.

Footnotes

Criteria for Progression and Award

A BSc in Forensic Science may be awarded in accordance with University regulations. An award with distinction will be made in accordance with University regulations 7.5.2.

Progression to SCQF 10 is subject to academic advice, module prerequisites and timetable constraints.

D. Learning Outcomes (Maximum of 5 per heading)

Outcomes should incorporate those applicable in the relevant QAA Benchmark statements

Knowledge and Understanding	
A1	Demonstrate a systematic, extensive and comparative knowledge and understanding of Forensic Science as a whole and its links to related subjects. A detailed knowledge of a few specialisms and developments, some of which are at, or informed by, the forefront of the subject.
A2	A critical understanding of the established theories, principles and concepts, and of a number of advanced and emerging issues at the forefront of the Forensic Science.
A3	A critical understanding of the uncertainty and limits of knowledge and how it is developed, and an ability to deploy established techniques of analysis and enquiry within Forensic Science.
A4	Exemplify application of scientific principles in forensic investigation
A5	Illustrate the interaction between social, legal and technical aspects of forensic science.
Practice - Applied Knowledge and Understanding	
B1	Demonstrate practical skills in laboratory techniques related to forensic science including some at the forefront of the subject.
B2	Show the development of investigative and evaluative skills in Forensic Science
B3	Display knowledge and awareness of laboratory issues in forensic science including quality assurance, health and safety and record keeping.
B4	Demonstrate the investigation and reporting of crime scenes

Communication, ICT and Numeracy Skills	
C1	Demonstrate the ability to present scientific information to a specialist and non-specialist audience
C2	Skills in identifying information needs, and in the systematic gathering, analysis and interpretation of ideas, concepts and qualitative and quantitative data and information from a range of evaluated sources including current research, scholarly, and/or professional literature.
C3	Present scientific information in a variety of forms suitable for scientific and non-scientific audiences
C4	Show competence in information management skills, especially IT skills including databases and on-line searches
Generic Cognitive Skills - Problem Solving, Analysis, Evaluation	
D1	Develop and demonstrate rigour in investigation, evaluation and analysis
D2	Display synthesis of materials from different sources for understanding of theory and investigation of problems in forensic science
D3	Illustrate investigative skills and strategies in problem solving in forensic science
Autonomy, Accountability and Working With Others	
E1	Operate effectively in a group / team situation
E2	Systematically identify and address their own learning needs both in current and in new areas, making use of research, development and professional materials as appropriate, including those related to the forefront of developments
E3	Apply their science-related and transferable skills in contexts where there is a requirement for: - the exercise of personal responsibility and initiative - decision-making in complex and unpredictable contexts - the ability to undertake further developments of a professional or equivalent nature.

Core Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
10	CHEM10001	Science Project	40	✓	✓		
10	CHEM10002	Advanced Analytical Techniques	20	✓			
10	CHEM10008	Forensic Evidence	20	✓			
10	CHEM10010	Forensic Biology	20		✓		

* Indicates that module descriptor is not published.

Footnotes

Optional Modules

SCQF Level	Module Code	Module Name	Credit	Term			Footnotes
				1	2	3	
10	CHEM10018	Drugs and Human Interactions	20		✓		

* Indicates that module descriptor is not published.

Footnotes

Criteria for Award

Standard University guidelines will be followed to decide on honours degree classification.

At least 480 credits are required with at least 200 in the subject area at SCQF level 9 and SCQF level 10 of which a minimum of at least 100 are at SCQF level 10.

Regulations of Assessment
Candidates will be bound by the general assessment regulations of the University as specified in the University Regulatory Framework. 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. 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.
Combined Studies
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 an exit award of CertHE / DipHE or BA / BSc in Combined Studies. For students studying BA, BAcc, or BD awards the award will be BA Combined Studies. For students studying BEng or BSc awards, the award will be BSc Combined Studies.

Changes

Changes made to the programme since it was last published:

Aspire 2 added to level 8 to replace Chemical Lab Techniques, it runs across terms 1 and 2

Aspire 3 added to Level 9 to replace Designer Drugs, it runs across terms 1 and 2

Evaluating Chem08007 had been split into two 10 credit modules. Crime Scene Investigation added to Term 1 and Forensic Statistics added to Term 2

Forensic Lab Techniques Chem09009 had been split into two 10 credit modules. Forensic Quality Management added to Term 1 and Forensic Techniuqes added to Term 2

Version Number: 1