

## Programme Specification for BSc (Hons) Forensic and Applied Biology

<b>This document applies to Academic Year 2018/19 onwards</b>
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1.	<b>Awarding institution/body</b>	University of Worcester
2.	<b>Teaching institution</b>	University of Worcester
3.	<b>Programme accredited by</b>	<a href="#">The Chartered Society of Forensic Sciences</a>
4.	<b>Final award</b>	BSc. Hons
5.	<b>Programme title</b>	Forensic and Applied Biology
6.	<b>Pathways available</b>	Single honours only
7.	<b>Mode and/or site of delivery</b>	Face to Face delivery of theoretical and practical work with some blended learning via Blackboard. All modules delivered on the sites of the University of Worcester.
8.	<b>Mode of attendance</b>	FT & PT
9.	<b>UCAS Code</b>	FC 41
10.	<b>Subject Benchmark statement and/or professional body statement</b>	<p>QAA Benchmark for Biosciences 2015.  <a href="http://www.qaa.ac.uk/en/Publications/Documents/SBS-Biosciences-15.pdf">http://www.qaa.ac.uk/en/Publications/Documents/SBS-Biosciences-15.pdf</a></p> <p>The Chartered Society of Forensic Sciences QAA benchmark skills for Crime Scene Investigation and Interpretation, Evaluation and Presentation of Evidence component standards are adhered also to  <a href="http://www.qaa.ac.uk/en/Publications/Documents/Subject-benchmark-statement-forensic-science.pdf">http://www.qaa.ac.uk/en/Publications/Documents/Subject-benchmark-statement-forensic-science.pdf</a></p>
11.	<b>Date of Programme Specification preparation/ revision</b>	<p>March 2013/updated May 2014/ amended regulations August 2014 and October 2014.                      Sept 15 updated of title for BIOS2107                      November 15 updated pre-req for BIOS3106 commence 16/17.                      November 15 updated to Personal Academic Tutors and hyperlink update to Taught Courses Regulatory Framework.                      Dec 15 update to hyperlinks following CSFS reaccreditation                      June 16 update to pre-req for BIOS3010                      To be implemented from 2017/2018:                      January 2017: removal of BIOS3051, BIOS2024, BIOS2040, BIOS2106, BIOS2107, ARCH2121, BIOS1211                      addition of BIOS1203, BIOS2112, BIOS2100, BIOS2110, BIOS3113, BIOS3012, BIOS3301, BIOS3014, SUST1001                      March 2017: general updates to template                      August 2017 - AQU amendments                      Jan 18 BIOS3012 pre-reqs updated                      August 2018 – AQU amendments                      December 2018 – BIOS3106 becoming optional                      June 2019 – BIOS 3301 title corrected                      October 19 - update to Independent Study title to be implemented Sept 20.                      December 19 – removal of optional modules PSYCH1434, BIOS3014, BIOS3301, BIOS3114, BIOS3010.                      Feb 20 – correction to pre-reqs for BIOS3050.</p>

### 12. Educational aims of the programme

Forensic and Applied Biology at Worcester is a specialist course that is accredited by The Chartered Society of Forensic Sciences. It offers a number of specialist modules along with a number of modules taken from our Biology programme at Worcester. The course is very practical offering students the opportunity to gather practical skills in both Biology and in some aspects of Forensic Science. Students also have the opportunity to gather some skills in Archaeology. There is also an opportunity to undertake an independent project in their third year, which is not offered by all Forensic-based courses in the UK. The emphasis on the development of 'hands on' practical skills provides students with useful skills for their future careers. The unique Worcester science personal development planning (PDP) scheme is designed to support student personal and career development.

In particular the course aims to:-

- a) provide a broad practical laboratory and field based Forensic/Applied Biology curriculum.
- b) give a supportive learning environment which acknowledges and responds to the diversity of student backgrounds and experiences, and which allow students the opportunity to realise their academic potential;
- c) provide students with the opportunity to study Forensic and Applied Biology at a depth and level appropriate to honours degree standard;
- d) develop to the appropriate pathway level the knowledge, skills and aptitudes of Forensic and Applied Biology, within an interdisciplinary, undergraduate degree scheme;
- e) enable students to work independently, analytically and critically;
- f) encourage students to develop a range of subject-specific and transferable skills appropriate to graduate employment and/or postgraduate study in Forensic and Applied Biology.

### **13. Intended learning outcomes and learning, teaching and assessment methods**

On successful completion of the course, students should be able to:

- a) demonstrate knowledge of material and an understanding of a range of biological and forensic concepts and principles at a variety of levels (from sub-cellular to whole organisms);
- b) access information from a variety of sources and show proficiency in assessing, evaluating, analysing, and synthesising the scientific information and data;
- c) communicate biological information and principles in an appropriate manner, employing skills of written, oral and visual communication, numerical analysis and information technology;
- d) design, execute and critically evaluate the outcomes of investigations carried out individually and in groups;
- e) record data accurately, analyse and interpret those data and test hypotheses;
- f) have practical skills in laboratory and/or field work, and be able to work safely and appropriately in these environments;
- g) have an understanding of ethical issues related to forensic and applied biology;
- h) work co-operatively with others, while demonstrating an increasing understanding of how to be an independent learner;

- i) plan, carry out and present a piece of hypothesis-driven work for a research project.
- j) develop specific skills in forensic work such as crime scene analysis, problem solving, , attention to detail, evidence recording, evaluation and assessment, and laboratory and field analysis techniques;
- k) communicate complex scientific concepts to lay audiences such as a court.

Tables mapping the learning outcomes of the course to the modules are detailed in the Forensic and Applied Biology student handbook section 1. Section 2 of this handbook shows how the Science PDP skills, based on the QAA benchmark statement, are linked to the individual modules in each course.

### **13.1 Learning and teaching and assessment methods**

The Forensic and Applied Biology course aims to provide supportive, student-centred learning environments that acknowledge and respond to the diversity of student backgrounds and experiences. The structure of the course enables students to move towards increasing independence in their studies from level 4 to level 6 in line with the Framework for Higher Education Qualifications (FHEQ) and University policies for assessment and curriculum design. Level 4 modules offer students structured tutor support for their learning, whilst at level 5 this support becomes less structured, although the extent to which this occurs varies with the difficulty of the task. All level 6, modules offer students opportunities for more independent learning, although specific tutor help will always be available. Learning outcomes, and hence assessments will always be more demanding at level 6.

Students will participate in a wide range of learning experiences. Teaching, assessment and private study are interlinked in that they are all aspects of each student's personal and academic development. A list of the range of learning experiences that may be encountered on the course are given below:-

Lectures, practical sessions, practical demonstrations, seminars, student-led seminars, self-instructional workbooks, workshops, tutorials, field work, field classes, field trips, field visits, directed reading, independent study, group projects, web conferencing, self-directed study, reflective accounts of own work, group work, self-study packages, blended learning, laboratory investigations, class discussions, computer simulations, case studies, museum visits, independent research, role-play, visiting speakers, test digs and crime scene simulations, reflective learning, interviews, simulated court environment. The course employs a variety of assessment methods, for more details please see section 14 of this programme specification.

### **13.2 Student skills**

Students will be able to obtain a wide range of skills on this course, e.g. a range of subject-specific and transferable skills appropriate to graduate employment and/or postgraduate study in Forensic and Applied Biology. For details please see PDP tables and module descriptors in the student handbook.

The Biological Sciences tutors at the University of Worcester have developed a Personal Development Planning scheme based on QAA Biosciences graduate and transferable skills. It contains a number of elements which run from induction through to level 6 and is compulsory for all Biological Sciences students. It was developed with three main aims in mind: to help students to reflect on the skills that they need in order to attain the next step in their studies, to make more effective use of the opportunities provided by academic tutorials to give the necessary individual support and guidance, and to increase the students' employability. The PDP skills are based on the QAA benchmark skills and each is linked to the appropriate assessments. However, practical and fieldwork skills and attributes are also recognised in the PDP scheme in order to increase employability. For more information please see the student handbook.

## PDP Skills and Attributes for Forensic and Applied Biology (based on QAA benchmark skills)

Skills and Attributes	Details
<b>1. Subject knowledge and understanding</b>	<p>1.1. Engage with the essential facts, major concepts, principles and theories</p> <p>1.2. Understand the broader context and appropriate multidisciplinary aspects of the subject</p> <p>1.3. Knowledge of the processes and mechanisms that have shaped the natural world</p> <p>1.4. Competence in basic experimental skills</p> <p>1.5. Understanding of information and data, set within the theoretical framework</p> <p>1.6. Critical analysis and assessment of data and information</p> <p>1.7. Familiarity of terminology, nomenclature and classification of systems</p> <p>1.8. Methods of acquiring, interpreting and analysing biological information.</p> <p>1.9. Critical understanding of the appropriate contexts for the use of methods through the study of texts, original papers, reports and data sets</p> <p>1.10. Awareness of the contribution of their subject to the development of knowledge about the diversity of life and its evolution</p> <p>1.11. Knowledge of a range of communication techniques and methodologies relevant to the particular discipline, including data analysis and the use of statistics</p> <p>1.12. Engagement with some of the current developments in the biosciences and their applications, and the philosophical and ethical issues involved</p> <p>1.13. Awareness of the contribution of biosciences to debate and controversies, and how this knowledge and understanding forms the basis for informed concern about the quality and sustainability of life</p> <p>1.14. Understanding the applicability of the biosciences to the careers to which graduates will be progressing.</p>
<b>2. Subject-specific skills</b>	<p>2.1. Recognition that much of what is taught is contested and provisional, particularly in the light of continuing scientific advances</p> <p>2.2. An appreciation of the complexity and diversity of life processes through the study of organisms, their molecular, cellular and physiological processes, their genetics and evolution, and the interrelationships between them and their environment</p> <p>2.3. The ability to read and use appropriate literature with a full and critical understanding, while addressing such questions as content, context, aims, objectives, quality of information, and its interpretation and application</p> <p>2.4. The capacity to give a clear and accurate account of a subject, marshal arguments in a mature way and engage in debate and dialogue both with specialists and non-specialists, using appropriate scientific language</p> <p>2.5. Critical and analytical skills: a recognition that statements should be tested and that evidence is subject to assessment and critical evaluation</p> <p>2.6. The ability to employ a variety of methods of study in investigating, recording and analysing material</p> <p>2.7. The ability to think independently, set tasks and solve problems.</p>
<b>3. Graduate and transferable skills: Intellectual skills</b>	<p>3.1. Recognise and apply subject-specific theories, paradigms, concepts or principles.</p> <p>3.2. Analyse, synthesise and summarise information critically, including published research or reports</p> <p>3.3. Obtain and integrate several lines of subject-specific evidence to formulate and test hypotheses</p> <p>3.4. Apply subject knowledge and understanding to address familiar and unfamiliar problems</p> <p>3.5. Recognise the moral and ethical issues of investigations and appreciate the need for ethical standards and professional codes of conduct.</p>

Skills and Attributes	Details
<b>4. Graduate and transferable skills: Practical skills</b>	<p>4.1. Undertake sufficient practical work to ensure competence in the basic experimental skills appropriate to the discipline under study</p> <p>4.2. Design, plan, conduct and report on investigations, which may involve primary or secondary data (e.g. from a survey database). These data may be obtained through individual or group projects</p> <p>4.3. Obtain, record, collate and analyse data using appropriate techniques in the field and/or laboratory, working individually or in a group, as is most appropriate for the discipline under study</p> <p>4.4. Undertake field and/or laboratory investigations of living systems in a responsible, safe and ethical manner</p>
<b>5. Graduate and transferable</b>	<p>5.1. Receive and respond to a variety of sources of information: textual, numerical, verbal, graphical</p>

<b>skills: Numeracy skills</b>	5.2. Carry out sample selection; record and analyse data in the field and/or the laboratory; ensure validity, accuracy, calibration, precision, replicability and highlight uncertainty during collection 5.3. Prepare, process, interpret and present data, using appropriate qualitative and quantitative techniques, statistical programmes, spreadsheets and programs for presenting data visually 5.4. Solve problems by a variety of methods, including the use of computers
<b>6. Graduate and transferable skills: Communication, presentation and information technology skills</b>	6.1. Communicate about their subject appropriately to a variety of audiences using a range of formats and approaches, using appropriate scientific language 6.2. Cite and reference work in an appropriate manner, including the avoidance of plagiarism 6.3. Use the internet and other electronic sources critically as a means of communication and a source of information.
<b>7. Graduate and transferable skills: Interpersonal and teamwork skills</b>	7.1. Identify individual and collective goals and responsibilities and perform in a manner appropriate to these roles, in particular those being developed through practical, laboratory and/or field studies. 7.2. Recognise and respect the views and opinions of other team members; negotiating skills 7.3. Evaluate performance as an individual and a team member; evaluate the performance of others 7.4. Develop an appreciation of the interdisciplinary nature of science and of the validity of different points of view
<b>8. Graduate and transferable skills: Self-management and professional development skills</b>	8.1. Develop the skills necessary for self-managed and lifelong learning (eg working independently, time management, organisational, enterprise and knowledge transfer skills) 8.2. Identify and work towards targets for personal, academic and career development 8.3. Develop an adaptable, flexible and effective approach to study and work.

#### 14. Assessment Strategy

The Forensic and Applied Biology course aims to develop autonomous and independent learners who possess a broad range of intellectual and transferable skills. In order to achieve these aims, a range of methods is used to assess students. Assessment methods include examinations, practical tests, practical and field reports, in-class tests, presentations and poster presentations.

Students have opportunities to develop the appropriate skills necessary for the particular assessment type used before summative assessment takes place. Extensive feedback is given on assessments and students are supported, through the Academic Tutoring Programme for the course, in reflecting and acting on this feedback in order to support their academic development.

The emphasis on formative assessment gives more opportunities to provide feedback and this takes a variety of forms, for example the level 4 30-credit modules provide regular and rapid feedback by using personal response systems.

As far as possible, the assessments have been spread throughout the modules. However, the skills and depth of understanding to be assessed take time to develop and consequently assessment deadlines do not generally occur in the first half the module. The range of assessment tasks used and their weightings, together with a calendar of submission dates, is shown in the students' handbook.

The Biological Sciences follow the University of Worcester Assessment Policy

<http://www.worc.ac.uk/aqu/documents/AssessmentPolicy.pdf>

All module outlines contain detailed assignment briefs and grading criteria which are, in most cases, specific for that particular assignment. Study Skills, which form part of the extended induction for level 4 students, as well as some modules, include sessions on how to make good use of this information.

The Forensic and Applied Biology course employs the UW generic undergraduate assessment criteria (see University Handbook), specific interpretation and elaboration of which will be outlined in assessment briefs within each individual module handbook given to the students. A table showing how each of the modules is assessed can be found in section 1 of the Forensic and Applied Biology student handbook.

## 15. Programme structures and requirements

### Course Title: BSc Forensic and Applied Biology

Level 4					
Module Code	Module Title	Credits (Number)	Status (Mandatory (M) or Optional (O))	Pre-requisites (Code of Module required)	Co-requisites/ exclusions and other notes
			Single Hons		
BIOS 1009	Introduction to Human Nutrition	15	O	None	None
BIOS 1010	Introduction to Human Anatomy and Physiology	15	M	None	None
ENVS 1100	Introduction to Ecology	15	O	None	None
BIOS 1220	Introduction to Forensic Sciences	30	M	None	BIOS 1102 excluded
BIOS 1201	Cell Biology	30	M	None	None
BIOS 1203	Health and Disease	30	O	None	None
BIOS 1205	Introduction to Biological Chemistry	15	M (Unless BIOS 1212 is taken as a 30 credit optional module)	None	BIOS 1212 excluded
ARCH 1101	Introduction to Archaeology	30	O	None	None
BIOS 1210	Comparative Animal Physiology	15	O	None	None
BIOS 1212	Introduction to Biological Chemistry and Genetics	30	O	None	BIOS 1205 excluded
ARCH 1105	Human Origins	15	O	None	None
SUST 1001	An Introduction to Sustainability	15	O	None	None
LANGxxxx	Optional modules offered by the Language Centre	15/30	O	-	-

#### Single Honours Requirements at Level 4

Single Honours students must take 120 credits in total to include all mandatory modules, BIOS 1010, BIOS 1220, BIOS 1201 and BIOS 1205, and optional modules - which can include up to 15/30 credits drawn from a range of Language Centre modules in: Academic English for native and non-native speakers of English; Modern Foreign Languages; and Teaching English as a Foreign Language (TEFL). Details of the available Language Centre modules can be found on the Language Centre website: <http://www.worcester.ac.uk/your-home/language-centre-module-options.html>.

Single Honours students should also choose additional modules from the table above to the value of 30 credits. If BIOS1212 is chosen as an optional module, students cannot take BIOS 1205 as the first half of the module covers this content.

Level 5					
Module Code	Module Title	Credits (Number)	Status (Mandatory (M) or Optional (O))	Pre-requisites (Code of Module required)	Co-requisites/ exclusions and other notes
			Single Honours		
BIOS 2003	Work Experience	15	O	BIOS 1201	BIOS 3003, ENVS 2005 GEOG 3112 excluded
BIOS 2200	Project and Career Development	30	M	None	BIOS 3114 excluded
BIOS 2023	Microbiology	15	O	BIOS 1201	None
BIOS 2100	Molecular Genetics	15	M unless taking BIOS 2201 as an Optional	BIOS 1201	BIOS 2201 BIOS 2202 excluded
BIOS 2201	Molecular and Cellular Biology	30	O	BIOS 1201	BIOS2100 BIOS 2202 excluded
BIOS 2112	Forensic archaeology and anthropology	30	M	None	None
BIOS 2054	Crime Scene Investigation	15	M	BIOS 1220	BIOS 3054
BIOS 2104	Human Genetics	15	O	BIOS 1201	None
BIOS 2105	Medical Forensic Science	15	M	BIOS 1010 or BIOS1102 or BIOS1203 or BIOS1211	None
ARCH 2122	Death & Burial	15	O	None	None
PSYC 1434	Introduction to Forensic Psychology	15	O	None	None
BIOS 2110	Immunology	15	O	BIOS 1201 or BIOS 1205	BIOS 3108 excluded
LANGxxxx	Optional modules offered by the Language Centre	15/30	O	-	-

#### Single Honours Requirements at Level 5

Single Honours students must take 120 credits in total to include all mandatory modules BIOS 2200, BIOS 2100, BIOS 2054, BIOS2112 and BIOS 2105.

Single Honours students should also choose additional modules from the table above to the value of 30 credits. If BIOS1212 is chosen as an optional module, students cannot take BIOS 1205 as the first half of the module covers this content.

Optional modules can include up to 15/30 credits drawn from a range of Language Centre modules in: Academic English for native and non-native speakers of English; Modern Foreign Languages; and Teaching English as a Foreign Language (TEFL). Details of the available Language Centre modules can be found on the Language Centre website:

<http://www.worcester.ac.uk/your-home/language-centre-module-options.html>.

<b>Level 6</b>					
<b>Module Code</b>	<b>Module Title</b>	<b>Credits (Number)</b>	<b>Status (Mandatory (M) or Optional (O))</b>	<b>Pre-requisites (Code of Module required)</b>	<b>Co-requisites/ exclusions and other notes</b>
			<b>Single Honours</b>		
BIOS 3002	Research Project	30	M	BIOS 2200	BIOS 3114
BIOS 3003	Work Experience	15	O	BIOS 1201	BIOS 2003, ENVS 2005 GEOG 3112 excluded
BIOS 3050	Interpretation, Evaluation and Reporting of Evidence	15	M	BIOS 2015, BIOS 2054, BIOS 3052	None
BIOS 3052	Forensic DNA Analysis	15	M	BIOS 2201, 2202 or 2100	None
BIOS 3053	Biological Indicators for Crime Reporting	15	M	None	None
BIOS 3106	Pharmacology	15	O	BIOS2100 or BIOS2201 or BIOS2202	None
BIOS 3109	Genomics & Bioinformatics	15	O	BIOS 2201, 2202 or 2100	None
BIOS 3111	Extension Module	15	O	None	None
BIOS 3112	Parasitology	15	O	BIOS 2201 or 2202 or 2100	None
BIOS 3113	Biochemistry of cancer	15	O	BIOS2201	None
BIOS 3012	Animal movement	15	O	None	None

#### **Single Honours Requirements at Level 6**

Single Honours students must take 120 credits from the table above to include all mandatory modules BIOS 3002, BIOS 3050, BIOS 3052, BIOS 3053, plus three 15 credit modules from BIOS 3003, BIOS3106, BIOS 3109, BIOS 3111, BIOS 3112, BIOS 3113 or BIOS3012.



## 16. QAA and Professional Academic Standards and Quality

The course has been developed to follow, where possible, bioscience benchmarks and the component standards set out by the The Chartered Society of Forensic Sciences. (See section 1 of the Forensic and Applied Biology Student Handbook). Both sets of criteria have been used to inform course outcomes. We also follow the QAA and UW guidelines on work experience. The course operates at levels four, five and six of the Framework for Higher Education Qualifications.

## 17. Support for students

- Forensic and Applied Biology students experience a variety of learning and teaching methods detailed in section 13.1 above and these are frequently reviewed and adapted in order to enhance the students' experience.
- An induction programme extended throughout the first year of study in one of the 30 credit modules in year 1. This extended induction allows the necessary study skills to be developed at the most appropriate time for the student.
- All students have a Personal Academic Tutor who they see twice each semester and the requirement to do so is linked to a mandatory module. The tutorial sessions are structured to guide and support each student, on an individual basis, throughout their course and to help them to realise their potential. The Personal Academic Tutors guide the students through completion of a Personal Development Plan related to the current QAA Biosciences benchmarks. All tutors have an open door policy.
- Science PDP scheme to develop student skills, to enable students to plan the most appropriate path through their course and to increase employability.
- Hyperlinks to Student Services and the Disability and Dyslexia Service are below:
  - <http://www.worcester.ac.uk/student-services/index.htm>
  - <http://www.worcester.ac.uk/student-services/disability-and-dyslexia.htm>
- A Virtual Learning Environment (Blackboard Learning System) to provide module-specific material, documents, activities.
- Detailed module outlines (module handbooks), which include planned teaching activity, attendance requirements, assessment brief, assessment criteria and reading lists.
- Student Handbook (published on an annual basis), to provide students with detailed course information.

The Forensic and Applied Biology students' handbook provides detailed information on all of the above points as well as information on modules and options available.

## 18. Admissions

Full time applicants apply through UCAS course code FC 41

Part-time applicants apply directly to the University of Worcester (UW)

### Admissions procedure

Applicants are considered on the basis of their UCAS application forms. It is not currently standard practice to interview candidates but those entering via non-standard entry routes will be interviewed.

Those who accept our offer will be invited to a Visit day to experience studying at Worcester.

### Admissions Policy

We welcome applications from people of all ages and backgrounds with an interest in studying Forensic and Applied Biology. The University aims to be accessible; it is committed to widening participation and encouraging diversity in the student population. The Institute of Science and the Environment works closely with central student support

services, including the Admissions Office, the Disability and Dyslexia Service and the International Office, to support students from a variety of backgrounds. We actively encourage and welcome people from the widest range of economic and cultural backgrounds, and value the contribution of mature learners. Students entering via non-standard entry routes may be interviewed.

### **Entry requirements**

The normal minimum entry requirement for undergraduate degree courses is the possession of 4 GCSEs (Grade C/4 or above) and a minimum of 2 A Levels (or equivalent Level 3 qualifications).

Applicants must have studied Biology or Chemistry to at least AS level or equivalent, and normally applicants must have an A level pass in Biology, although applicants who have not studied science for some time or do not have a science background will be considered. The study of other sciences such as, Maths or Physics would be an advantage.

The current UCAS Tariff requirements for entry to this course are published in the prospectus and on the UW website <https://www.worc.ac.uk/journey/a-z-of-courses.html>

See [Admissions Policy](#) for other acceptable qualifications.

### **Disclosure and Barring Service (DBS) requirements**

A satisfactory DBS may be required if a placement/WBL experience is a required element of the course.

### **Recognition of Prior Learning:**

Details of acceptable level 3 qualifications, policy in relation to mature students or applicants with few or no formal qualifications can be found in the prospectus or on the University webpages. Information on eligibility for recognition of prior learning for the purposes of entry or advanced standing is also available from the [University webpages](#) or from the Registry Admissions Office (01905 855111).

### **Admissions/selection criteria:**

Offers are made in line with the entry requirements specified above and demonstration via the application form of a strong interest in Biological Sciences. The reference is also taken into account.

## **19. Methods for evaluating and improving the quality and standards of teaching and learning**

Mechanisms for review and evaluation of teaching, learning and assessment, the curriculum and outcome standards include:

- Student Module evaluation and feedback
- An Annual Evaluation Report completed by Programme Leader
- Periodic Review including external scrutiny
- External Examiners' Reports
- Academic staff annual appraisal
- Staff Development Away Days and other events
- Staff research and scholarly activity
- Staff appraisal
- ISE Policy on Approval (Module Outlines and Assignment Briefs) and Moderation of Student Work

Committees with responsibility for monitoring and evaluating quality and standards:

- ISE Quality Committee
- Biological Sciences Course Management Committee
- Academic Standards and Quality Enhancement Committee
- ISE and UW Ethics Committees
- Learning, Teaching and Student Experience Committee

Mechanisms for gaining student feedback on the quality of teaching and their learning experience:

- Module feedback questionnaires
- Student Course Representatives
- Biological Sciences Course Management Committee
- Meetings with module tutors and academic tutor
- National Students Survey
- Induction, exit and other ad hoc surveys

## 20. Regulation of assessment

### The course operates under the University's Taught Courses Regulatory Framework

#### Requirements to pass modules

- Modules are assessed using a variety of assessment activities which are detailed in the module specifications.
- The minimum pass mark is D- for each module.
- Students are required to submit all items of assessment in order to pass a module, and in some modules, a pass mark in each item of assessment may be required.
- Full details of the assessment requirements for a module, including the assessment criteria, are published in the module outline.

#### Submission of assessment items

- Students who submit course work late but within 5 days of the due date will have work marked, but the grade will be capped at D- unless an application for mitigating circumstances is accepted.
- Students who submit work later than 5 days but within 14 days of the due date will not have work marked unless they have submitted a valid claim of mitigating circumstances.
- For full details of submission regulations see [Taught Courses Regulatory Framework](#).

#### Retrieval of failure

- Students are entitled to resit failed assessment items for any module that is awarded a fail grade.
- Reassessment items that are passed are capped at D-.
- If a student is unsuccessful in the reassessment, they have the right to retake the module (or, in some circumstances, take an alternative module); the module grade for a re-taken module is capped at D-.
- A student will be notified of the reassessment opportunities in the results notification issued via the secure student portal (SOLE). It is the student's responsibility to be aware of and comply with any reassessments.

#### Requirements for Progression

- Students at Level 4 will be permitted to progress to Level 5 when they have passed at least 90 credits at Level 4.
- Students at Level 5 may be permitted to progress to Level 6 when they have passed at least 210 credits including at least 90 credits at Level 5.

- A student who fails 90 credits or more due to non-submission will be required to withdraw from the University.

### Requirements for Awards

Award	Requirement
Degree (non-honours)	Passed a minimum of 300 credits with at least 90 credits at Level 5 or higher and a minimum of 60 credits at Level 6, as specified on the award map.
Degree with honours	Passed a minimum of 300 credits with at least 90 credits at Level 5 or higher and a minimum of 60 credits at Level 6, including the mandatory modules for Level 5 and Level 6 of the award (not the Research Project module) as specified on the award map.

### Classification

The honours classification will be determined by whichever of the following two methods results in the higher classification:

Classification determined on the profile of the best grades from 60 credits attained at Level 5 and the best grades from 120 credits at Level 6. Level 5 and Level 6 grades count equally in the profile.

Classification determined on the profile of the best grades from 120 credits attained at Level 6 only.

### 21. Indicators of quality and standards

External Examiners have consistently stated that our standards are the equivalent of standards in other UK higher education institutions. They are particularly impressed with the level of feedback on offer to students.

Two members of staff are former forensic practitioners making their expertise available to students on the course. The course has also been accredited by the [The Chartered Society of Forensic Sciences](#).

### Research Quality in the Institute of Science and the Environment

Postgraduate research in Biology is highly important in ISE, there are currently 10 MPhil/PhD students in the Biological Sciences subject area and we have had a further 8 PhD completions and 1 MPhil completion in Biology over the last 5 years. There are 16 staff with supervisory experience of research degrees in ISE.

Publications from members of staff in the University are made available via a research repository called WRAP (Worcester Research and Publications). ISE has a significant proportion of these publications. Most of these are in the Biological Sciences subject area and are almost all comprised of Peer reviewed publications.

### National Student Survey

In the 2012 survey, the overall grade for student satisfaction for Biological Sciences, including Forensic and Applied Biology, at Worcester was 4.3, putting us at a creditable equal seventh out of 62 Biology courses at UK universities

### Student Employability

100% of the students graduating this course in the previous academic year are now in employment.

### Student progression and Achievement

In Forensic and Applied Biology just over 96% of students progressed from year one to year two in 2011-12. Similarly just over 96% progressed from year 2 to year 3.

The number of first and upper second class honours degrees was 100% in 2010/2011 and 80% in 2011/2012.

### **Comments from External Examiners**

The following comments were received from the External Examiner for the 2011/2012 academic year.

*“For 2011/12, the programme benefitted from an influx of new members of staff – some permanent, some temporary. They brought with them professional knowledge, fresh ideas and the intention of promoting research in the forensic area. The projects in particular are testimony to a wide range of interests of staff and students. Project reports are generally well referenced, indicating that staff and students are well informed of recent development.”*

*“I commend the flexible way in which the projects are run. It is good practice that the students start to define their projects in year 2 and have a chance to run pilot experiments early on to assess the viability of their ideas. I also commend the detail and quality of the formal and informal feedback given to the students. Students who study the feedback should be able to improve their performance, indeed, the course team was able to quote examples where this has been the case”*

### **Summary of Feedback from Students**

Most modules received 80% or above positive feedback for the feedback questions and many positive comments were made. Tutors have included many of their suggestions for this academic year in all module outlines indicating how feedback from the previous year has led to improvements in the module.

In semester 2 2011 2012 100% of the students provided positive feedback on both of the forensic modules delivered in this session.

## **22. Graduate destinations, employability and links with employers**

### **Graduate destinations**

An increasing number of our Forensic and Applied students go on to study for Masters or PhD awards and advice on following this pathway is included in our careers guidance within the Institute.

Some of our students have entered employment with direct links to their degree subject, for example Forensic Toxicology. Others have used their transferrable graduate skills to gain employment in seemingly unrelated areas.

#### *Career opportunities (forensic) include:*

- Independent forensic contractors such as LGC, Key Forensic, Cellmark Forensics, Forensic Access, and Orchid Biosciences Europe (Independent DNA Testing)
- Police laboratories such as West Mercia Constabulary as Scene of Crime Officers and in laboratories
- Forensic Science Agency of Northern Ireland as the forensic science service but for Northern Ireland
- Horse racing Forensic Laboratory,
- The Home Office

#### *Career opportunities (applied biology) include:*

- Government Agencies (e.g. Environment Agency, MoD & English Nature)
- Non-governmental Organisations (e.g. Greenpeace & Local Wildlife Trusts)
- Local Government (e.g. Environmental Health)
- Technical Posts (e.g. Microbiological monitoring & medical technicians, water companies, hospital technicians)
- Education (e.g. teaching, lecturing & research)
- Other Graduate Professions (e.g. accountancy & management)
- Further Study: M.Sc., M.Phil or Ph.D.
- Scientific and medical sales

### **Student employability**

Careers advice is embedded in the curriculum at all three levels. In Level 4, students are introduced to the Careers Service in BIOS 1201 Cell Biology as part of the Science PDP scheme. This is followed up in BIOS 2200, with a more substantial careers session which looks at careers options and strategies. In this module one of the assignments takes the form of an interview and submission of a CV. Careers advice is also given as a part of the university Worcester weeks at all levels of the course. Students are given the opportunity in most modules to develop work-based skills (see PDP table above) however; students also have the opportunity to take a Work Placement module at Level 5 or 6.

### **Links with employers**

We have links with Worcestershire and Herefordshire Wildlife Trusts and Birmingham Sea Life Centre, with whom staff liaise to arrange Independent Studies and employment opportunities. An employee of Worcestershire Wildlife Trust (and ex- student) also sits on the University Strategic Biodiversity Management Group, chaired by a member of the Biology staff. We also have links with West Mercia Police and Hereford and Worcester County Council. These links have provided work experience opportunities, facilities for Independent Studies, and careers advice from those in the relevant fields.

### **The involvement of The Chartered Society of Forensic Sciences in Course Development**

In the 2009/2010 period, Accreditation was awarded by The Chartered Society of Forensic Sciences. One of the recommendations was to increase the amount of basic chemistry delivered as part of the degree programme. This has been reflected in the development of a 30 credit module in year one which includes much of the content from the forensic biology module along with a considerable amount of additional chemistry applied to forensic science. This together with the introduction of a module introducing students to chemistry in semester 1 (Introduction to Molecular Biosciences) has considerably increased the amount of chemistry on the course in accordance with the Society's recommendations.

**Please note:** This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module can be found in associated course documentation e.g. course handbooks, module outlines and module specifications.