



Course Handbook  
BSc (Hons) Biology  
September 2019  
Course Leader Barbara Tigar  
School of Forensic and Applied Sciences



Please read this Handbook in conjunction with the University's Student Handbook.

All course materials, including lecture notes and other additional materials related to your course and provided to you, whether electronically or in hard copy, as part of your study, are the property of (or licensed to) UCLan and MUST not be distributed, sold, published, made available to others or copied other than for your personal study use unless you have gained written permission to do so from the Dean of School. This applies to the materials in their entirety and to any part of the materials.

## **Contents**

- 1 Welcome to the Course**
- 2 Structure of the Course**
- 3 Approaches to teaching and learning**
- 4 Student Support**
- 5 Assessment**
- 6 Classification of Awards**
- 7 Student Feedback**
- 8 Appendices**
  - 8.1 Programme Specification**

## 1. Welcome to the course

Welcome to the B.Sc. (Hons) Biology Degree Programme. The course team wish you every success and is committed to making your time of study a happy and rewarding experience.

The primary purpose of this handbook is to provide sufficient basic information to allow you to safely negotiate the rules and regulations governing the B.Sc. (Hons) Biology Degree Programme.

The course structure and outlines of the modules are provided in brief and you will be given more information on these at a later date. Progression is also covered in the handbook but will be dealt with in more detail at a later date.

We have tried to draw together a range of important information, in an attempt to:-

- provide an outline of the course, including its aims, syllabus and assessment pattern
- explain student support and course monitoring arrangements

Additional information, specific to individual modules will be provided by module tutors.

BSc Biology at UCLan is a course that has been designed to develop not only the student's knowledge of the different aspects of Biology, but also how this is applied in the working of a modern biologist. To achieve this the course has been developed with input from professionals within the field to generate a case study based course with high practical content to create an ideal learning environment for today's student.

### 1.1 Rationale, aims and learning outcomes of the course

#### **Aims of the Course**

All university courses have overall aims and learning outcomes which describe what you will achieve on your course of study.

It is important that both you and your teaching team are clear about what you are striving to achieve over the next two years of your studies, and so we have listed our aims here.

The aims of the Degree in Biology are to:

- enthuse and motivate students, and develop their understanding of biology in a way that encourages originality of thought and breadth of vision..
- instil an understanding of the study of biology and its importance and application in different contexts.
- develop a knowledge and understanding of biology, based on a scientific foundation, with the ability to apply knowledge and analyse and evaluate information.

- involve the learner in a supportive and stimulating learning environment in which students are encouraged to achieve personal growth in terms of a wide range of skills including communication, numeracy, IT, independence, interpersonal and group-working skills.
- provide experience of current analytical techniques and practical skills relevant to biology and appropriate for employment.
- prepare the learner for a career in biology or in positions requiring knowledge of biology

### **What are the Learning Outcomes of the Course?**

At the end of your studies it is intended that you will have knowledge and understanding to:

- evaluate the fundamental concepts, principles, theories and current developments in modern Biology, including study of the interrelationships of living organisms and the importance of natural selection and evolutionary processes and the philosophical and ethical issues involved
- use various analytical techniques and apply them to different fields of biology
- apply theory/knowledge to new situations, including the formulation of a hypothesis, the design of experiments and the appropriate use of statistical analysis to enable a valid interpretation of experimental results

At the end of your studies it is intended that you will have the following subject specific skills and be able to:

- employ a variety of methods to study in investigating, recording and analysing material
- make use of appropriate laboratory equipment to enable a biological study to be undertaken
- discuss the safety aspects to be considered when undertaking laboratory based investigations and to work safely within a laboratory environment
- analyse a range of data derived experimentally or sourced from the literature or databases and present them in the most appropriate format and interpret the findings from such data
- explain 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
- 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

At the end of your studies it is intended that you will have the following thinking skills and be able to:

- Acquire, interpret and analyse biological information with a critical understanding of the appropriate contexts for their use through the study of texts, original papers, reports and datasets.
- Define and develop strategies for solving problems.

- Analyse a range of data derived experimentally, or from the literature or databases, and evaluate it critically with the support of a logical and structured argument.

At the end of your studies it is intended that you will have developed the following transferable skills relevant to employability and personal development and be able to:

- write using an appropriate scientific style
- work as a useful contributor to a group or independently
- use IT effectively for information retrieval, analysis, communication and presentations
- communicate appropriately to a variety of audiences using a range of formats and approaches, using appropriate scientific language
- develop the skills necessary for self-managed and lifelong learning to include working independently, time management, organisational, enterprise and knowledge transfer skills

## 1.2 Course Team

### Who's Who on the Biology Course

#### School of Psychology

Jamies Taylor, PhD, CPsychol, CSci, AFBPsS, SFHEA

**Head of School**

e-mail: [Jataylor2@uclan.ac.uk](mailto:Jataylor2@uclan.ac.uk) | [uclan.ac.uk](http://uclan.ac.uk) Ext 3438 Room DB103

Barbara Tigar      BSc, MSc, DIC, PhD, PGCert, FHEA, FRES  
Senior Lecturer (Environmental Biology and Ecology); **Course  
Leader**

e-mail [btigar@uclan.ac.uk](mailto:btigar@uclan.ac.uk) Ext 3497 Room KM124

Kevin Butt      BSc, MSc, PhD  
Reader (Ecology);  
e-mail [krbutt@uclan.ac.uk](mailto:krbutt@uclan.ac.uk) Ext 3966 Room KM104

William Goodwin      BSc, PhD (Molecular Biology)  
Reader (Forensic Biology)  
e-mail: [whgoodwin@uclan.ac.uk](mailto:whgoodwin@uclan.ac.uk) Ext 4254 Room DB326

Sibte Hadi      M.B.B.S, DMJ, PhD  
Lecturer (Forensic Genetics and Medicine)  
e-mail: [shadi@uclan.ac.uk](mailto:shadi@uclan.ac.uk) Ext 4395 Room MB131

Chris Lowe      BSc, MSc, PhD  
Senior Lecturer (Waste and Environmental Management)  
e-mail: [cnlowe@uclan.ac.uk](mailto:cnlowe@uclan.ac.uk) Ext 3960 Room KM102

Karen Lupton      BSc, MSc (Biology)  
Lecturer (Biology).  
e-mail: [kdlupton@uclan.ac.uk](mailto:kdlupton@uclan.ac.uk) Ext 4332 Room JBF103

Claire Mellor      BSc, MSc, PhD  
Lecturer (Cell Biology)  
e-mail: [cmellor3@uclan.ac.uk](mailto:cmellor3@uclan.ac.uk) Ext 4024 Room KM105

Thanos Rizoulis      BSc, MSc, PhD  
Lecturer (Environmental Microbiology)  
e-mail: [arizoulis@uclan.ac.uk](mailto:arizoulis@uclan.ac.uk) Ext 4376 Room KM124

Judith Smith      BSc, PhD (Genetics)  
Lecturer (Forensic Genetics)  
e-mail: [jasmith@uclan.ac.uk](mailto:jasmith@uclan.ac.uk) Ext 4257 Room MB057

### 1.3 Expertise of staff

The academic staff that will be teaching you are all highly qualified and specialists in the areas that they teach. All staff are engaged in research and/or scholarly activity which helps enrich your experiences with cutting-edge knowledge.

### 1.4 Academic Advisor

You will be assigned an Academic Advisor who will provide additional academic support during the year. They will be the first point of call for many of the questions that you might have during the year. Your Academic Advisor will be able to help you with personal development, including developing skills in self-awareness, reflection and action planning.



### 1.5 Administration details

Campus Admin Services provides academic administration support for students and staff and are located in the following hubs which open from 8.45am until 5.15pm Monday to Thursday and until 4.00pm on Fridays. The hub can provide general assistance and advice regarding specific processes such as extenuating circumstances, extensions and appeals.

### Foster Building

Forensic and Applied Social Sciences  
Pharmacy and Biomedical Sciences  
Psychology  
Physical Sciences  
telephone:  
email:

### 1.6 Communication



The University expects you to use your UCLan email address and check regularly for messages from staff. If you send us email messages from other addresses they risk being filtered out as potential spam and discarded unread.

The School of Forensic and Applied Sciences try to respond to e-mails within one working day. We may also correspond with you by post so it is essential you ensure your address is always up-to-date.

### 1.7 External Examiner

The University has appointed an External Examiner to your course who helps to ensure that the standards of your course are comparable to those provided at other higher education institutions in the UK. The name of this person, their position and home institution can be found below. If you wish to make contact with your External Examiner, you should do this through your Course Leader and not directly. External Examiner reports will be made available to you electronically. The School will also send a sample of student coursework to the external examiner(s) for external moderation purposes, once it has been marked and internally moderated by the course tutors. The sample will include work awarded the highest and lowest marks and awarded marks in the middle range.

The external examiner for this course is Dr Jackie Parry, Senior Lecturer in the Faculty of Medicine and Health at Lancaster University.



## 2. Structure of the course

### 2.1 Overall structure

### How the course is put together

Your degree is composed of modules, which can be full modules with a weighting of 1.0, half modules (weighting 0.5), or double modules (weighting 2.0). Typically, degree programmes consist of a mixture of half, full and (more rarely) double modules. To achieve a BSc Honours degree you must study the equivalent of 18 modules over the three years of the course, as described in the following section.

Modules are also given a credit weighting so that modules at different Universities can be compared, so 0.5 modules are worth 10 credits, 1.0 modules 20 credits and 2.0 modules 40 credits. Listed below are the different credits that are needed to achieve a Bachelor of Honours degree, a Bachelor degree without honours, a Diploma of Higher Education (DipHE) or a Certificate of Higher Education (CertHE).

In year 1 of the course all of the modules are compulsory. However, in subsequent years as well as compulsory modules there is a degree of optionality as outlined



below. When making your choices in Year 2 it is important that you also consider the modules in the final year as some of these can only be studied if you have already completed the requisite modules in year 2. This will be explained to you in more detail by the course leader during progression (section 2.2.1).

## **Course Structure**

### **Year 1**

All of the following modules are compulsory

Module Code	Module Title	Credit Rating
PS1601	Introduction to Cell Biology	40
FZ1603	Introduction to Biological Research	20
PS1604	Science and Society	20
FZ1605	Introduction to Field Studies in Environmental Biology	20
NT1003	Ecology	20

## Year 2

The modules FZ2601 and NT2031 are compulsory for all students, thereafter you must choose a further 4 modules as indicated below.

Module Code	Module Title	Credit Rating
FZ2607	Evolutionary Biology	20
NT2031	Research Theory and Practice	20
	<b>Plus AT LEAST THREE from the following:</b>	
FZ2602	Applied Molecular Biology	20
FZ2603	Biodiversity and Conservation	20
FZ2604	Biology of Health and Disease	20
FZ2605	Applied Microbiology	20
FZ2606	Introduction to Pharmacology and Cell culture	20
	<b>PLUS (IF REQUIRED) ONE from the following:</b>	
ECTV	ELECTIVE	20

## Year 3

The Fieldwork module (NT3011) and dissertation module are compulsory for all students. You will then need to choose a further 60 credits worth of modules as shown below.

Module Code	Module Title	Credit rating
NT3011	Fieldwork	20
FZ3699	Dissertation	40
	<b>Plus AT LEAST TWO from the following:</b>	
FZ3601	Biotechnology and Bioinformatics	20
FZ3602	Ecotoxicology	20
PS3080	Advanced Approaches to Understanding Behaviour	20
	<b>PLUS (IF REQUIRED) ONE from the following:</b>	
NT3021	Applied Ecology	20
FZ3011	Forensic Genetics	20
FZ3603	Work Based Learning	20
ECTV	ELECTIVE	20

### 2.2 Modules available

Each module is a self-contained block of learning with defined aims, learning outcomes and assessment. A standard module is worth 20 credits. It equates to the learning activity

expected from one sixth of a full-time undergraduate year. Modules may be developed as half or double modules with credit allocated up to a maximum of 120 credits per module.

Year 1

### PS1601 Introduction to Cell biology

The general aim of the module is to develop understanding of aspects of cell biology, genetics and metabolism. The module will introduce subcellular structure and diversity; the basics of molecular biology; Mendelian, biometrical and population genetics; key principles in metabolic biochemistry; enzymology, botany, entomology and microbiology. It will also introduce safe and competent laboratory skills, data handling and analytical skills

### FZ1603 Introduction to Biological Research

This module will provide you with an opportunity to develop your skills in locating, selecting and interpreting information from a wide variety of published sources, using relevant assistive technology in both the location and presentation of findings. You will also gain an understanding of the various experimental approaches used within biological research (both quantitative – with parametric and non-parametric data - and qualitative) and gain an appreciating of how this impacts on both the conclusions that can be drawn and the presentational styles required when interpreting such data. Through the introduction of issues such as hierarchy of evidence and journal impact factors you will gain an understanding of methods that may be applied to select high quality information for your future studies.

### PS1604 Science and Society

This module will provide you with an opportunity to identify, review and debate the relevant science behind issues that are currently newsworthy. Many news stories are written by non-scientists and often are “sensationalised” to sell newspapers. You will gain an appreciation of how and why the media might oversimplify complex biological concepts and how scientific publications can be misrepresented and will develop an insight into the differences between scientific writing versus journalistic style writing and explore a wide range of biological topics “hot off the press”. You will also get the opportunity to lead and participate in the discussion and debate of ethical issues that result from advances in bioscience, providing you with an opportunity to think in a structured way, and present your ideas, both visually and verbally, to your peers.

### FZ1605 Introduction to Field Studies in Environmental Biology

This module seeks to introduce students to some practical elements of environmental biology with a focus on natural environments and the impact of human activities. The learning and teaching strategy will develop a range of academic and personal skills including biological and environmental data collection, data analysis and presentation, self-organisation, independent study and research, accessing and assessing information sources, and effective communication including academic writing and presentation skills.

#### NT1003 Ecology

This module provides an introduction to concepts key to the subject of ecology, enabling you to gain an understanding of ecological issues in the context of natural resources and the environment, and the vocabulary of the ecological discipline.

#### Year 2

#### FZ 2607 Evolutionary Biology

The main aim of this module is to provide you with a good insight into the evolutionary forces that have generated life on earth.

#### NT 2031 Research Theory and Practice

The aim of this module is to enable you to review the factors influencing the selection of research topics; to critically examine the range of research models available within the fields of study; to develop the appropriate skills to successfully undertake the Honours dissertation. You will consider specific tools of data collection and analysis in qualitative and quantitative research. It provides the opportunity to evaluate the benefits of combining qualitative and quantitative approaches in interdisciplinary academic and professional research and to consider the relevance and applicability of research to external agencies, industry and voluntary groups.

#### FZ2602 Applied Molecular Biology

The main aim of the module is to provide you with a thorough understanding of the principles of classical molecular biology and to introduce you to current advances in the field.

#### FZ2603 Biodiversity and Conservation

The module focuses on species biodiversity, distribution and conservation. With the future of so many species uncertain, an understanding of the factors relevant to their persistence is essential. Only through such knowledge can we actively manage habitats and populations to increase the chances of their survival. The module introduces key theoretical ecological concepts related to habitat management and

species conservation before concentrating on practical aspects of conservation and also exploring broader related themes of conservation policy and ecosystem services.

#### FZ2604 Biology of Health and Disease

To develop an understanding of physiological processes in the body and how changes in these processes can lead to pathological conditions. The module will utilise a case study approach considering different disease states to look at different processes in the body

#### FZ2605 Applied Microbiology

This module extends the basic knowledge of microbiology and immunology gained in the first year, providing you with an opportunity to gain an understanding of microbial growth and control, pathogenicity and infectivity of selected microorganisms and communicability with the mammalian host. You will gain an understanding of human immunity including how the immune system functions in the recognition and elimination or tolerance of infectious agents. The module will also cover microorganisms in the environment, outlining the environments they are found in and considering appropriate sampling methods to isolate and identify such organisms. Microbial communities and biofilm growth present significant challenges in this respect. The module will also introduce the student to various important biotechnological processes that rely on microbial activity for their performance.

#### FZ2606 Introduction to Pharmacology and Cell Culture

The aim of this module is to cover the neurophysiology and endocrine systems. These will be covered in detail from initial chemical and electrical signal transmission in the nervous system to the relation with specific receptor cells for light (visual system), sound (hearing), balance, smell and general sensory observation. Mechanisms of these systems will be covered and also related to drugs that can alter these pathways. Laboratory practical's will cover ways in which these drugs are tested in animal cell cultures in order to elucidate their toxic side effects.

## Year 3

### NT3011 Fieldwork

This module provides an opportunity for specialist field investigation relevant to the final year of your degree programme, and will allow detailed field-based investigation of course themes in one or more chosen locations. It will also extend theoretical and practical knowledge through fieldwork, provide experience of devising, conducting and reporting on small-scale field investigation, and develop higher level field skills in observation, experimental design and reporting.

### FZ3699 Dissertation

The research project provides you with the opportunity to consolidate and to apply knowledge and a range of laboratory/research skills attained throughout your undergraduate programme. You will be able to actively engage in the scientific research process.

### FZ3601 Biotechnology and Bioinformatics

This module will give you an understanding of the principles, concepts and procedures available in molecular biology and bioinformatics. Also, you will gain an understanding of 'new technologies' and their applications in genomics, proteomics and bioinformatics; and the new tools and software's developed recently, including next generation sequencing.

### FZ3602 Ecotoxicology

Ecotoxicology combines the subjects of ecology and toxicology to assess the impact of chemicals on individuals, populations, communities and ecosystems. This module focuses on the applied use of organisms (both animals and plants) to assess the toxicity of chemicals (in the laboratory) and the ecological effects of contaminants / pollutants in the environment. Module delivery will place an emphasis on case study material supported by external industry speakers and field and laboratory practicals.

### PS3080 Advanced Approaches to Understanding Behaviour

This module will develop your understanding of how modern technologies have provided insight into the brain-behaviour relationship. You will explore how technologies such as neuroimaging can provide a powerful approach in exploring the neural substrates of behavior and vulnerability to psychiatric illness. Module content will emphasise links between physiological events and differences in information processing within distinct brain regions and circuits. You will examine how these techniques represent a critical tool in our efforts to understand the neurobiology of both normal and pathologic behavioral states.

## NT3021 Applied Ecology

This module aims to provide you with a working knowledge of how ecological principles affect the lives of almost everyone. This will be shown through examples drawn from industries and practices which demonstrate how fundamental concepts of ecology are utilised to promote production and profit, often at the detriment of the environment. Topical case study material will, where appropriate, draw upon anthropogenic activities influencing ecosystems.

## FZ3603 Work Based Learning

This module aims to provide you with experience of the application of biology in a setting relevant to your degree which will enable you to reflect on the experience and your own skills and development needs in relation to future careers.

### 2.3 Module Registration Options

Discussions about your progression through the course normally take place in February each year. It is an opportunity for you to make plans for your study over the next academic year. The course team will tell you about the various modules / combinations available and you will both agree on the most appropriate (and legal) course of study for you.

### 2.4 Study Time

#### 2.4.1 Weekly timetable

A timetable will be available once you have enrolled onto the programme, through the Student Portal.

This is your personal timetable which will include all your classes you need to attend, please check your timetable regularly as changes may sometimes occur.

#### 2.4.2 Expected hours of study

How much work do you have to do? A lot depends on you. As a rough guide the normal amount of work involved in achieving a successful outcome to your studies is to study for 10 hours per each credit you need to achieve – this includes attendance at UCLan and time spent in private study.

On average, then, you should be planning to do between 36 and 40 hours per week. **Any lesser commitment than this could affect your chances of progressing onto your chosen course.** You should bear this in mind if you are going to undertake part-time employment. Your first commitment must be to the course: you are a **full-time** student it means just that.



### 2.4.3 Attendance Requirements

You are required to attend all timetabled learning activities for each module. Notification of illness or exceptional requests for leave of absence must be made to:

You are required to attend all timetabled learning activities for each module. Notification of illness or exceptional requests for leave of absence must be made to the Foster Hub 01772 891990 or 01772 891991 or e-mail [FosterHub@uclan.ac.uk](mailto:FosterHub@uclan.ac.uk). Unauthorised absence is not acceptable and may attract academic penalties and/or other penalties. **Authority will NOT be given for holidays during term times.**

For International Students under the Visas and Immigration (UKVI) Points Based System (PBS) - you **MUST** attend your course of study regularly; under PBS, UCLan is obliged to tell UKVI if you withdraw from a course, defer or suspend your studies, or if you fail to attend the course regularly.

If you have not gained the required authorisation for leave of absence, do not respond to communications and if you are absent for 4 weeks or more you will be deemed to have withdrawn from the course. If this is the case then the date of withdrawal will be recorded as the last date of attendance

Each time you are asked to enter your details on SAM you must remember that the University has a responsibility to keep information up to date and that **you must only enter your own details on the system**. To enter any other names would result in inaccurate records and be dishonest. Any student who is found to make false entries can be disciplined under the student guide to regulations.

## 3. Approaches to teaching and learning

### 3.1 Learning and teaching methods

*The Lecture* is the most formal teaching method and serves primarily to define the syllabus. It should not be regarded as providing all you need to know, but rather as the 'skeleton' of knowledge. The responsibility for providing the 'flesh' rests largely with you and this is discharged through private study.

*Laboratory classes* are a very important element of the course. They are primarily intended to train you in the principles and methods of empirical enquiry, and in the conventions of reporting investigations. You will receive comprehensive written guidelines in relation to the latter.

The major purpose of the *Seminar* is to encourage students to publicly discuss topics and issues, and through this develop the skills of criticism, argumentation and communication. As you will discover, several different seminar formats are employed.

*Fieldwork* is a vital part of Biology and offers the opportunities to undertake ecological investigations in given habitats. It may also permit collection of biological samples for further investigation in a laboratory setting.



*Tutorials* support for lectures and allow student to cover areas to a more in depth level or gain support in learning in a less formal atmosphere than a lecture.

*Workshops* will provide opportunities for interactive or 'hands on' learning in a less formal setting than the lecture.

As with all higher level education *you* are responsible for your own learning; the lectures are merely the starting point and you will have to undertake a substantial amount of study in order to succeed.

**The aim of the School of Forensic and Applied Science is to promote deep and active learning and for the students to achieve an appropriate balance between (a) the accumulation of subject specific knowledge (b) the understanding of subject-specific concepts (c) the application of these, and (d) the development of general investigative and presentational skills.**

### 3.2 Study skills

This course is designed to encourage students to develop their study skills, not only with a dedicated skills module but through all aspects of the course. We also encourage students to make full use of the support services provided by the university WISER <http://www.uclan.ac.uk/students/study/wiser/index.php>



### 3.3 Learning resources

#### 3.3.1 Learning Information Services (LIS)

Extensive [resources](#) are available to support your studies provided by the university LIS – library and IT staff. Take advantage of the free training sessions designed to enable you to gain all the skills you

need for your research and study.

#### 3.3.2 Electronic Resources

LIS provide access to a huge range of electronic resources – e-journals and databases, e-books, images and texts.

Course and module materials are **not** provided in 'hard copy' format, however, wherever practicable, lecture notes and/or presentations, seminar materials, assignment briefs and materials and other relevant information and resources are made available in electronic form via **Blackboard**. This is the brand name for the on-line Virtual Learning Environment (VLE) that the University uses to support and enhance teaching and learning.

All students can access the Blackboard spaces for the course and modules that they are registered for. Once logged into your Blackboard area you can access material from the course and all of the modules you are studying without having to log in to each module separately.

You can expect that, on the Course page, you will be able to access:

1. Course Handbook
2. Student Guide to Assessment
3. Timetables
4. Minutes of SSLC Meetings
5. External Examiners Report

You can expect that, on each module space, you will be able to access:

1. Module Description
2. Module Booklet
3. Assignment briefs (including a marking scheme), if not included in the module booklet
4. Generic feedback on coursework assignments
5. Handouts for tutorials and practicals
6. Lecture notes (no later than 48hrs **after** the date of the lecture).
7. A past exam paper (if there is an exam in the module)
- 8. Generic feedback on the examination paper**

### 3.4 Personal development planning

While you are at university, you will learn many things. You already expect to learn lots of facts and techniques that support your studies, but you will also learn other things of which you might be unaware. You will learn how to study, how to work with other people, how to manage your time to meet deadlines, and so on. If you are to be an employable graduate it is vital that you can list in your CV the skills that employers value.

Employers are looking for skills such as:

- self-organisation
- team work
- good written communication
- good oral communication
- problem solving

To help you, we have introduced a system that aims to:

- help you to identify the skills you should be developing,
- help you to identify the ones you are weak in, and
- to take action to improve those skills.

This approach can broadly be described as Personal Development Planning (PDP), and is delivered and monitored through skills modules and the Academic Advisor system. Students are provided with a PDP handbook in electronic format and are introduced to the idea by their Academic Advisor (AA). Their AA will then guide them throughout their time at university, both in constructing their PDP and in making sure that they are developing the right skills, helping them to identify and address any issues.

Each student sees their AA six times a year (seven in year 1) for a small group tutorial where the AA and other students will discuss a particular skill or employability issue. Typically, the student will have prepared a document or done a task in preparation for the meeting. Topics targeted at meetings include time management and vocabulary developing at Level 4, ranging up to psychometric testing and help with job applications at Level 6. These tutorials help students to identify and develop their skills

and also encourage a culture of confidence between tutee and AA, so that if any specific problems arise with a student the AA will be in a position to assist.

The AA topics are constantly reviewed and updated in response to current practice in the workplace and to feedback from AAs and tutees. AAs insist on seeing a completed PDP before writing references.



### 3.5 Preparing for your career

Your University experience is not only about achieving your chosen award, it is also about developing as a person and realising your potential. We want you to gain the skills and attitudes that will help you to achieve your goals and aspirations.

Your future is important to us, so to make sure that you achieve your full potential whilst at university and beyond, your course has been designed with employability learning integrated into it. This is not extra to your degree, but an important part of it which will help you to show future employers just how valuable your degree is. These “Employability Essentials” take you on a journey of development that will help you to write your own personal story of your time at university:

- To begin with, you will explore your identity, your likes and dislikes, the things that are important to you and what you want to get out of life.
- Later, you will investigate a range of options including jobs and work experience, postgraduate study and self-employment,
- You will then be ready to learn how to successfully tackle the recruitment process.

You will be able to record your journey using Pebblepad, the university’s e-portfolio system, which will leave you with a permanent record of all the fantastic things you have achieved during your time at UCLan.

It’s your future: take charge of it!

[Careers](#) offers a range of support for you including:-

- career and employability advice and guidance appointments
- support to find work placements, internships, voluntary opportunities, part-time employment and live projects
- workshops, seminars, modules, certificates and events to develop your skills

Daily drop in service available from 09:00-17:00 for CV checks and initial careers information. For more information come along and visit the team (in Foster building near the main entrance) or access our careers and employability resources via the Student Portal.

## 4. Student Support

Perhaps the most important thing that the School of Forensic and Applied Sciences will give you is support. We will guide you through your foundation year and instil in you the skills and knowledge required to progress to your chosen area of study.



### 4.1 Academic Advisors

You will be assigned an Academic Advisor at the start of the year for the whole year.

They are responsible for providing you with support and advice in relation to your programme of studies, assistance in accessing other services available to students within the University, and to offer whatever help and assistance they can to make your time on this course a satisfying and stimulating experience. Their job is not to have all the answers but they will be able to direct you to the person or place where they can be found. Your academic advisor should be supportive, helpful and try to understand (but not necessarily share) your point of view when you need advice. At times, it may be necessary for them to challenge you over your progress, performance or attendance, but it is not their role to constantly monitor you in these areas as may have happened at school. Your Personal Tutor should be your first point of contact for advice on a wide range of academic, personal, administrative and practical issues.

This source of support is an important feature of the course and we would encourage you to see your Personal Tutor as a friend and helper. Alternatively, where problems are related to a particular module, you are encouraged to approach the module tutor. You should meet with your personal tutor regularly. You are encouraged to have regular meeting with your Personal Tutor. You should have at least six meetings with the Personal Tutor over the year.

Both you and your tutors should keep appropriate records of meetings and this may form part of your Personal Development Process.

If you need to get advice in an emergency or when your personal tutor is not available then another member of your teaching team will endeavour to help you.

### 4.2 Students with disabilities

If you have a disability that may affect your studies, please either contact the Disability Advisory Service - [disability@uclan.ac.uk](mailto:disability@uclan.ac.uk) - or let one of the course team know as soon as possible.

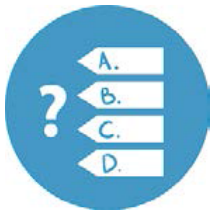
With your agreement information will be passed on to the Disability Advisory Service. The University will make reasonable adjustments to accommodate your needs and to provide appropriate support for you to complete your study successfully. Where necessary, you will be asked for evidence to help identify appropriate adjustments.

### 4.3 Students' Union

The Students' Union offers thousands of volunteering opportunities ranging from representative to other leadership roles. We also advertise paid work and employ student staff on a variety of roles. You can find out more information on our website:

<http://www.uclansu.co.uk/>

## 5. Assessment



### 5.1 Assessment Strategy

The Course Team recognise the main purpose of assessment as:

- the diagnosis of strengths and weaknesses of individual students
- encouragement to students to be involved in determining their own performance
- evaluation as to whether or not the student has met the learning outcomes of the module and programme in order to progress to the next level or achieve an exit award

Assessment is continuous and uses both formative and summative methods.

Formative assessment relates to the continuing and systematic appraisal of the degree of learning. This helps you by providing feedback on the appropriateness of your study skills in meeting the learning objectives. It also assists the academic staff by providing information as to the appropriateness of the learning environment in facilitating student learning. Formative assessment includes assessment strategies that encourage the student and tutor to build on the student's strengths and to plan remedial help to correct identified weaknesses. Formative assessment encourages the development of personal self-awareness and self-evaluation such that corrective change can be instigated by the individual.

The nature of formative assessment varies between modules. In some there are short tests or essays, while in others there is informal feedback via activities such as tutorials or discussion of experiment results during laboratory sessions.

It is important that we try to match assessment to the learning outcomes of each module. Sometimes we need to assess how well you have assimilated facts, sometimes we need to assess your understanding, and at other times your application of the facts. Often we need to test all of these learning outcomes at once. In addition, we need to assess skills, such as your ability to communicate your ideas.

The assessment methods and what we are trying to assess by the particular method are shown below:

Examinations	Short answer questions are usually looking for how well you have learned factual information. Essay questions are looking for your understanding and critical analysis skills.
Presentations	Your ability to collect and surmise information and your presentational skills under pressure are being assessed here, as is the ability to think on your feet using the facts that you have learned.
Essays	Non-examination situation essays assess your understanding of the subject as well as your research, written communication and critical analysis skills.

Short notes	Your ability to collect and surmise information concisely and accurately are assessed with this type of assessment.
Case studies	These assess the application of theory to practical situations. They also assess either your written or oral presentation skills when communicating your deliberations to the class or marker.

You will find a detailed breakdown of the assessments in the module booklets you will be given at the start of each module.

### **5.2 Notification of assignments and examination arrangements**

We will try to spread the assessment load. Nevertheless, it is important that you plan your work around the assessment timetable. For this reason assessment dates are detailed in the module booklets. Hand-in times and dates will also be included in the assessment brief that accompanies every assessment. Once examination dates have been set you will be notified on your timetable.

### **5.3 Referencing**

There are a number of ways to include referencing within text. Generally, scientists use the Harvard system but other systems may be acceptable if you discuss it with your module tutor.

### **5.4 Cheating, plagiarism, collusion or re-presentation**

Please refer to the information included in section 6.6 of the University Student Handbook for full definitions. The University uses an online Assessment Tool called Turnitin. A pseudo-Turnitin assignment will be set up using the School space on Blackboard to allow students to check as many drafts as the system allows before their final submission to the 'official' Turnitin assignment. Students are required to self-submit their own assignment on Turnitin and will be given access to the Originality Reports arising from each submission. In operating Turnitin, Schools must take steps to ensure that the University's requirement for all summative assessment to be marked anonymously is not undermined and therefore Turnitin reports should either be anonymised or considered separately from marking. Turnitin may also be used to assist with plagiarism detection and collusion, where there is suspicion about individual piece(s) of work.

You can find more about the various forms of plagiarism and how to avoid it in the following publications:

Bone, Alison, *Plagiarism: a guide for law lecturers*, UK Centre for Legal Education, 28th October 2003 ([www.ukcle.ac.uk/resources/plagiarism.html](http://www.ukcle.ac.uk/resources/plagiarism.html)).

Smith, Jean et al, *How to avoid plagiarism*.  
<http://www.northwestern.edu/uacc/plagiar.html>

Extract from University of Brighton Student Guide, *All my own work? Plagiarism and how to avoid it*, UK Centre for Legal Education, 12th July 2003  
<http://www.ukcle.ac.uk/resources/trns/plagiarism/guide.html>



Writing Tutorial Services, Plagiarism: *What It is and How to Recognize Avoid It*,  
Indiana University, Bloomington, IN, USA  
<http://www.indiana.edu/~wts/pamphlets/plagiarism.pdf>

## 6. Classification of Awards

The University publishes the principles underpinning the way in which awards and results are decided in [Academic Regulations](#). Decisions about the overall classification of awards are made by Assessment Boards through the application of the academic and relevant course regulations.



## 7. Student Feedback

You can play an important part in the process of improving the quality of this course through the feedback you give.

In addition to the on-going discussion with the course team throughout the year, there are a range of mechanisms for you to feedback about your experience of teaching and learning. We aim to respond to your feedback and let you know of our plans for improvement.

The Students' Union can support you in voicing your opinion, provide on-going advice and support, and encourage your involvement in all feedback opportunities. They will be asking that you complete the National Student Survey (during semester 2 for students in their final year of study) or the UCLan Student Survey (all other students).

The Students' Union and University work closely together to ensure that the student voice is heard in all matters of student-life. We encourage students to provide constructive feedback throughout their time at university, through course reps, surveys and any other appropriate means,

The Union's Student Affairs Committee (SAC), members of Students' Council and School Presidents each have particular representative responsibilities, and are involved with decision making committees as high as the University Board. Therefore, it is very important students engage with the democratic processes of the Students' Union and elect the students they see as most able to represent them.

### 7.1 Student Staff Liaison Committee meetings (SSLCs)

Details of the Protocol for the operation of SSLCs is included in section 8.2 of the University Student Handbook.

The purpose of a SSLC meeting is to provide the opportunity for course representatives to feedback to staff about the course, the overall student experience and to inform developments which will improve future courses. These meetings are normally scheduled once per semester.

Meetings will be facilitated using guidelines and a record of the meeting will be provided with any decisions and / or responses made and / or actions taken as a result of the discussions held. The meetings include discussion of items forwarded by course representatives, normally related to the following agenda items (dependent on time of year).

The course team encourage student feedback in all areas and recognise that additional items for discussion may also be raised at the meeting

- Update on actions completed since the last meeting

- Feedback about the previous year – discussion of external examiner’s report; outcomes of National /UCLan student surveys.
- Review of enrolment / induction experience;
- Course organisation and management (from each individual year group, and the course overall);
- Experience of modules - teaching, assessment, feedback;
- Experience of academic support which may include e.g. Personal Development Planning, academic advisor arrangements;
- Other aspects of University life relevant to student experience e.g. learning resources, IT, library;
- Any other issues raised by students or staff.

## 8. Appendices

### 8.1 Programme Specification

#### UNIVERSITY OF CENTRAL LANCASHIRE

#### Programme Specification

This Programme 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 he/she takes full advantage of the learning opportunities that are provided.

***Sources of information on the programme can be found in Section 17***

1. Awarding Institution / Body	University of Central Lancashire
2. Teaching Institution and Location of Delivery	University of Central Lancashire, Preston
3. University School/Centre	School of Forensic and Applied Sciences
4. External Accreditation	
5. Title of Final Award	BSc (Hons) Biology
6. Modes of Attendance offered	Full Time/Part Time/Sandwich
7. UCAS Code	CC10
8. JACS code	C100
9.	
10. Relevant Subject Benchmarking Group(s)	QAA Subject Benchmark Statement: Biosciences 2015 (SBS) <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>
11. Other external influences	Accreditation criteria Royal Society of Biology <a href="https://www.rsb.org.uk/images/RSB_Accreditation_Handbook.pdf">https://www.rsb.org.uk/images/RSB_Accreditation_Handbook.pdf</a>



<b>12. Date of production/revision of this form</b>	April 2018
<b>13. Aims of the Programme</b>	
<ul style="list-style-type: none"> <li>To enthuse and motivate students, and develop their understanding of biology in a way that encourages originality of thought and breadth of vision.</li> </ul>	
<ul style="list-style-type: none"> <li>To instil an understanding of the study of biology and its importance and application in different contexts.</li> </ul>	
<ul style="list-style-type: none"> <li>To develop a knowledge and understanding of biology, based on a scientific foundation, with the ability to apply knowledge and analyse and evaluate information.</li> </ul>	
<ul style="list-style-type: none"> <li>To involve the learner in a supportive and stimulating learning environment in which students are encouraged to achieve personal growth in terms of a wide range of skills including communication, numeracy, IT, independence, interpersonal and group-working skills.</li> </ul>	
<ul style="list-style-type: none"> <li>To provide experience of current analytical techniques and practical skills relevant to biology and appropriate for employment.</li> </ul>	
<ul style="list-style-type: none"> <li>To prepare the learner for a career in biology or in positions requiring knowledge of biology</li> </ul>	
<b>14. Learning Outcomes, Teaching, Learning and Assessment Methods</b>	
<b>A. Knowledge and Understanding</b>	
<p>A1 Evaluate the fundamental concepts, principles, theories and current developments in modern Biology, including study of the interrelationships of living organisms and the importance of natural selection and evolutionary processes and the philosophical and ethical issues involved.</p> <p>A2 Use various analytical techniques and apply them to different fields of biology.</p> <p>A3 Apply theory/knowledge to new situations, including the formulation of a hypothesis, the design of experiments and the appropriate use of statistical analysis to enable a valid interpretation of experimental results.</p>	
<b>Teaching and Learning Methods</b>	
<p>A range of teaching and learning methods will be used, including lectures, practicals, laboratory sessions, fieldwork, tutorials, presentations, problem solving exercises, case studies, discussions and reflection. Blended learning is utilised in modules integrating taught, self-directed and E-learning. The final year research module will provide students the opportunity to further consolidate research skills.</p>	
<b>Assessment methods</b>	
<p>Through a combination of workbooks; short notes; essays; reports of various types e.g. practical reports, summaries, data analysis; group and individual presentations and end of module examinations.</p>	
<b>B. Subject-specific skills</b>	
<p>B1. Employ a variety of methods in investigating, recording and analysing material.</p> <p>B2. Make use of appropriate laboratory and field based equipment, to enable a biological study to be undertaken.</p> <p>B3. Discuss the safety aspects to be considered when undertaking laboratory and field based investigations and to work safely and ethically within a laboratory or field environment.</p> <p>B4. Analyse a range of data derived experimentally or sourced from the literature or databases and present them in the most appropriate format and interpret the findings from such data.</p>	

- B5. Explain 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.
- B6. 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.

#### **Teaching and Learning Methods**

A range of teaching and learning methods will be used, including lectures, practicals, laboratory sessions, fieldwork, tutorials, presentations, problem solving exercises, case studies, discussions and reflection. Blended learning is utilised in modules integrating taught, self-directed and E-learning. The final year research module will provide students the opportunity to further consolidate research skills.

#### **Assessment methods**

Through a combination of workbooks; short notes; essays; reports of various types e.g. practical reports, summaries, data analysis; group and individual presentations and end of module examinations, and a research project report.

#### **C. Thinking Skills**

- C1. Acquire, interpret and analyse biological information with a critical understanding of the appropriate contexts for their use through the study of texts, original papers, reports and datasets.
- C2. Define and develop strategies for solving problems.
- C3. Analyse a range of data derived experimentally, or from the literature or databases, and evaluate it critically with the support of a logical and structured argument.

#### **Teaching and Learning Methods**

A range of teaching and learning activities will be used including lectures; practical work, data interpretation exercises; case studies; problem based exercises; discussions within the group and with tutors. A final year research module will give the students the opportunity to develop their research skills, including selection and interpretative skills and mastery of using primary and secondary sources.

#### **Assessment methods**

Through a combination of workbooks; short notes; essays; presentations; examinations; reports of various types e.g. practical reports, summaries, data analysis and the final year research project.

#### **D. Other skills relevant to employability and personal development**

- D1. Write using an appropriate scientific style,
- D2. Work as a useful contributor to a group or independently.
- D3. Use information technology effectively for information retrieval, analysis, communication and presentations.
- D4. Communicate appropriately to a variety of audiences using a range of formats and approaches, using appropriate scientific language.
- D5. Develop the skills necessary for self-managed and lifelong learning to include working independently, time management, organisational, enterprise and knowledge transfer skills.

Coursework is generally required to be word processed; workshops developing skills in the

use of appropriate IT sources, including the World Wide Web, the use of databases and suitable IT analytical packages; workshops on library and literature searching; presentations; practical work incorporating numeracy and statistics; teamwork through tutorials, case studies, practical's and problem solving activities. Students are given guidance on the development of skills via the personal tutor system.

**Assessment methods**

Through a combination of written reports, presentations; laboratory notebooks; group and individual project; data analysis and presentations and a final year research project report.

**13. Programme Structures\***

**14. Awards and Credits\***

Level	Module Code	Module Title	Credit rating	
Level 6	NT3011	Fieldwork	20	<p><b>BSc (Hons) Biology</b> Requires 360 credits including a minimum of 220 at Level 5 or above and 100 at Level 6</p> <p><b>BSc Biology</b> Requires 320 credits including a minimum of 180 at Level 5 or above and 60 at Level 6</p> <p><b>Students who successfully complete the FZ2055 placement module will receive the award "in sandwich mode"</b></p>
	FZ3699	Research Project	40	
	FZ3601	<b>Plus AT LEAST TWO from the following:</b> Biotechnology and Bioinformatics	20	
	FZ3602	Ecotoxicology	20	
	PS3080	Advanced Approaches to Understanding Behaviour	20	
	NT3021	<b>PLUS (IF REQUIRED) ONE from the following:</b> Applied Ecology	20	
	FZ3011	Forensic Genetics	20	
	FZ3603	Work Based Learning Module	20	
Level 5	ECTV	ELECTIVE	20	<p><b>Diploma of Higher Education Biology</b> Requires 240 credits including a minimum of 100 at Level 5 or above</p>
	FZ2607	Evolutionary Biology	20	
	NT2031	Research Theory and Practice	20	
	FZ2602	<b>Plus AT LEAST THREE from the following:</b> Applied Molecular Biology	20	
	FZ2603	Biodiversity and Conservation	20	
	FZ2604	Human Physiology and Disease	20	
	FZ2605	Applied Microbiology	20	
	FZ2606	Introduction to Pharmacology and Cell Culture	20	
ECTV	<b>PLUS (IF REQUIRED) ONE from the following:</b> ELECTIVE	20		
		For a Sandwich award, students will undertake the following module between		

	FZ2055	years 2 and 3 assessed on a pass/fail basis: Placement Module	120	
Level 4	PS1601 FZ1603  PS1604 FZ1605  NT1003	Introduction to Cell Biology Introduction to Biological Research Science and Society Introduction to Field Studies in Environmental Biology Ecology	40 20  20 20  20	<b>Certificate of Higher Education</b> Requires 120 credits at Level 4 or above
Level 3	FZC013 FZC015 FZC016 FZC017  YOC001 YOC002 YOC003 YOC004 YOC005 YOC006	Students taking Foundation Year on Campus will take the following modules:-  Study Skills Biology Chemistry Mathematics & Physics  Students taking Foundation Year at a partner college will take the following modules:-  Skills for Science Biology Chemistry Physical Sciences Biochemistry Environmental Science	30 30 30 30  20 20 20 20 20 20	Requires completion of 120 credits at Level 3. Successful completion of the course leads to progression on to Year 1 of:  BSc Hons.... - Chemistry - Forensic Science - Forensic Science and Anthropology - Biology  Depending on results of the foundation degree students averaging 60% or more may also be eligible to progress to:  BSc Hons... - Biomedical Science - Physiology and Pharmacology - Neuroscience  Other courses may also become available.  Students who exit after the Foundation year will receive a transcript of their modules and grades.

### 15. Personal Development Planning

This is a structured and supported process undertaken by an individual to reflect upon their own learning, performance and / or achievement and to plan for their personal, educational and career development.

Students are provided with a PDP handbook in electronic format and are introduced to the idea by their Academic Advisor. Their Academic Advisor will then guide them throughout their time at university, both in constructing their PDP and in making sure that they are developing the right skills, helping them to identify and address any issues.

PDP is delivered and monitored through skills modules and the academic advisor system. Year 1 students will regularly see their academic advisor over the year within small group tutorials where the academic advisor and other students will discuss a particular skill or employability issue, or in individual meetings with the academic advisor. Typically, the student will have prepared a document or done a task in preparation for the meeting. These meetings help students to identify and develop their skills and also encourage a culture of confidence between tutee and advisor, so that if any specific problems arise with a student the academic advisor will be in a position to assist.

The topics discussed in meetings are constantly reviewed and updated in response to current practice in the workplace and to feedback from Academic Advisors and students. A completed PDP will be used to assist Academic Advisors when writing references.

In Years 2 and 3 students will meet with their advisor either within group sessions or individually a minimum of 4 times a year.

#### **16. Admissions criteria \***

(including agreed tariffs for entry with advanced standing)

*\*Correct as at date of approval. For latest information, please consult the University's website.*

Applicants will normally be required to have, one of:

Chemistry, Biology, BBC at A2, BTEC extended DMM, BTEC DD, Pass Access Course with 112 UCAS points, IB- Pass Diploma with 112 UCAS points including HL Chemistry or Biology

In addition, applicants will be required to have five GCSE passes at Grade C/4 or equivalent including Maths and English.

Applicants will be required to have a minimum level of proficiency in English Language equivalent to IELTS grade 6 with no sub score lower than 5.5

Applications from individuals with non-standard qualifications, relevant work or life experience and who can demonstrate the ability to cope with and benefit from degree-level studies are welcome. If candidates have not studied recently they may be required to undertake an Access Programme. APL/APEL will be assessed through standard University procedures.

#### **FOUNDATION Year Entry (on campus)**

Entry to this Programme requires Chemistry, Biology, DDD at A2, BTEC extended MMP BTEC DM, Pass Access Course with 72 UCAS points, IB- Pass Diploma with 72 UCAS points including HL Chemistry or Biology

In addition, applicants will be required to have Maths and English GCSE at Grade C/4 or equivalent.

International Applicants will be required to have a minimum level of proficiency in English Language equivalent to IELTS grade 6 with no sub score lower than 5.5.

#### **For admission to Foundation Year (Level 3) at a partner college:-**

In line with our support of Access to Higher Education, applications are considered without or with few formal qualifications. Applicants are interviewed and if it can be shown the applicant has the ability to enjoy and benefit from degree level study a place will be offered. We will consider alternative or professional qualifications, life experience, motivation, commitment and assessment of key skills.

Please consult the website or UCLAN admissions department for the most up to date requirements.

#### **17. Key sources of information about the programme**

- Outside the University – QAA website, including the Biosciences benchmarks statements; UCAS handbooks and website; National Occupational Standards.
- University sources – UCLan School of Forensic and Applied Sciences website; University prospectus, Student Handbook.



	ECTV	ELECTIVE	O																
	FZ2055	Placement Module	O	✓				✓			✓	✓	✓	✓		✓	✓	✓	✓
LEVEL 4	PS1601	Introduction to Cell Biology	COMP	✓	✓			✓				✓	✓		✓	✓		✓	
	FZ1603	Introduction to Biological Research	COMP			✓				✓			✓		✓	✓		✓	✓
	PS1604	Science and Society	COMP	✓							✓		✓			✓	✓	✓	✓
	FZ1605	Introduction to Field Studies in Environmental Biology	COMP	✓	✓			✓				✓	✓		✓	✓		✓	
	NT1003	Ecology	COMP	✓			✓					✓		✓	✓				✓

**Note:** Mapping to other external frameworks, e.g. professional/statutory bodies, will be included within Student Course Handbooks

## 19. LEARNING OUTCOMES FOR EXIT AWARDS:

### Learning outcomes for the award of: Certificate of Higher Education in Biology

Demonstrate an understanding of some of the fundamental concepts, principles, theories and current developments in modern Biology, including study of the interrelationships of living organisms and the importance of natural selection and evolutionary processes and the philosophical and ethical issues involved,

Use some of the basic analytical techniques and apply them to different fields of biology.

Work safely and ethically within a laboratory or field environment

Apply theory/knowledge to some new situations

Make use some basic laboratory and field based equipment, to enable a biological study to be undertaken

Analyse data derived experimentally or sourced from the literature or databases and present them in the most appropriate format and interpret the findings from such data

Explain 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

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

Acquire, interpret and analyse biological information with an understanding of the appropriate contexts for their use through the study of texts, original papers, reports and datasets.

Analyse data derived experimentally, or from the literature or databases, and evaluate it critically with the support of a logical and structured argument.

Write using an appropriate scientific style.

Work as a useful contributor to a group or independently

Use information technology effectively for information retrieval, analysis, communication and presentations.

Communicate appropriately to a variety of audiences using a range of formats and approaches, using appropriate scientific language.

Develop some of the skills necessary for self-managed and lifelong learning to include working independently, time management, organisational, enterprise and knowledge transfer skills.

### Learning outcomes for the award of Diploma of Higher Education Biology

Demonstrate an understanding of many of the fundamental concepts, principles, theories and current developments in modern Biology, including study of the interrelationships of living organisms and the importance of natural selection and evolutionary processes and the philosophical and ethical issues involved,

Use many of the basic analytical techniques and apply them to different fields of biology.

Apply theory/knowledge to new situations, including the formulation of a hypothesis, the design of experiments and the appropriate use of statistical analysis to enable a valid interpretation of experimental results.



Employ a variety of methods in investigating, recording and analysing material

Make use of much of the basic laboratory and field based equipment, to enable a biological study to be undertaken

Discuss the safety aspects to be considered when undertaking laboratory and field based investigations and to work safely and ethically within a laboratory or field environment

Analyse a range of data derived experimentally or sourced from the literature or databases and present them in the most appropriate format and interpret the findings from such data

Explain 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

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

Acquire, interpret and analyse biological information with some understanding of the appropriate contexts for their use through the study of texts, original papers, reports and datasets.

Define and develop strategies for solving problems.

Analyse data derived experimentally, or from the literature or databases, and evaluate it critically with the support of a logical and structured argument.

Write using an appropriate scientific style.

Work as a useful contributor to a group or independently

Use information technology effectively for information retrieval, analysis, communication and presentations.

Communicate appropriately to a variety of audiences using a range of formats and approaches, using appropriate scientific language.

Develop many of the skills necessary for self-managed and lifelong learning to include working independently, time management, organisational, enterprise and knowledge transfer skills.

### **Learning outcomes for the award of BSc (Hons) Biology**

Demonstrate an understanding of many of the fundamental concepts, principles, theories and current developments in modern Biology, including study of the interrelationships of living organisms and the importance of natural selection and evolutionary processes and the philosophical and ethical issues involved,

Use various analytical techniques and apply them to different fields of biology.

Apply theory/knowledge to new situations, including the formulation of a hypothesis, the design of experiments and the appropriate use of statistical analysis to enable a valid interpretation of experimental results.

Employ a variety of methods in investigating, recording and analysing material

Make use of most of the appropriate laboratory and field based equipment, to enable a biological study to be undertaken

Discuss the safety aspects to be considered when undertaking laboratory and field based investigations and to work safely and ethically within a laboratory or field environment

Analyse data derived experimentally or sourced from the literature or databases and present them in the most appropriate format and interpret the findings from such data

Explain 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

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

Acquire, interpret and analyse biological information with a good understanding of the appropriate contexts for their use through the study of texts, original papers, reports and datasets.

Define and develop strategies for solving problems.

Analyse a range of data derived experimentally, or from the literature or databases, and evaluate it critically with the support of a logical and structured argument.

Write using an appropriate scientific style.

Work as a useful contributor to a group or independently

Use information technology effectively for information retrieval, analysis, communication and presentations.

Communicate appropriately to a variety of audiences using a range of formats and approaches, using appropriate scientific language.

Develop most of the skills necessary for self-managed and lifelong learning to include working independently, time management, organisational, enterprise and knowledge transfer skills.