

Certificate of Higher Education in Life Science, part-time (evening)

For students entering Part 1 in 2006/07

Awarding Institution:	The University of Reading
Teaching Institution:	The University of Reading
Relevant QAA subject benchmarking group(s):	N/A
Faculty of Arts and Humanities/Life Sciences	Programme length: 2 years or more
Date of specification: September 2006	
Programme Director: Dr Sarah Smith	
Programme Advisor : Dr Nina Brooke	
Board of Studies: Continuing Education	
Accreditation: N/A	

Summary of programme aims

The primary aim of the Certificate of Higher Education in Life Science is to provide a part-time University 'C' level programme for members of the local community who might not otherwise receive a University-level education. The Certificate of Higher Education in Life Science also aims to enable part-time adult students to become independent and confident learners with a range of appropriate subject-based and transferable skills that may facilitate lifelong learning and progression to 'I' and 'H' level programmes. The Certificate of Higher Education in Life Science aims to enable students to understand the scientific methods and concepts of Biology, develop an awareness of advances in biotechnology, recognise the value of biology in society and appreciate the relationship between different aspects of the subject.

Transferable skills

The University's Strategy for Teaching and Learning has identified a number of generic transferable skills that students can expect to have developed by the end of a degree programme (written and oral communication, information handling, numeracy, problem-solving, team working and use of information technology). The Certificate of Higher Education in Life Science provides a starting-point for the development of these skills. Effective communication in speech and writing, including the ability to assess, evaluate and present scientific data, is gained through practical laboratory exercises, group discussion, oral presentations and written assignments. Integral to this development is the gathering, synthesising and interpretation of information, as well as problem-solving and the critical judgment needed to address familiar and unfamiliar problems. Team-working is practised in discussion, practical and group exercises, while IT skills are developed through locating, retrieving and analysing information and the presentation of coursework. Awareness of numeracy is gained through manipulation and analysis of numerical data. In addition, time-management skills are developed through attendance, participation in course activities and in meeting deadlines. Self-awareness is gained through examination of oneself as an adult learner in individual feedback and personal tutorials.

Programme content

Number of credits: 120

Level: C

Students take four 20-credit core modules, two in Year 1 (**CD1LS1 Introduction to Biology** and **CD1LS2 Genes**) and two in Year 2 (**CD1LS3 Ecology** and **CDLS4 Evolution**), plus 40 option credits, 5 of which must be a compulsory study skills module 'Getting Started'. Students with recent HE experience may, at the discretion of the programme director, be exempt from elements of the Getting

Started module; for Life Science students to be considered for partial exemption they would normally need to have obtained a degree in Science in the past year. No one is normally exempt from the Plagiarism session. Students are advised to take the 'Getting Started' study skills module before they embark on their first core Certificate module.

The Certificate of Higher Education in Life Science carries 120 credits at Level C (80 Certificate of Higher Education subject-specific core credits and 40 option credits) and is equivalent to Part 1 of a degree programme.

The 40 Option credits may be gained from:

- a) Any part of the School of Continuing Education's Open Studies programme
- b) A level C module in another subject from the other Certificate of Higher Education programmes or the part-time degree provision

These option credits may be taken before, during or after the four core modules and may, but do not have to, be in one or more other subjects. Details of courses offered for the Open Studies credits may be found in the School of Continuing Education's 'Public Courses' prospectus.

c) Or if wishing to progress from a Certificate of Higher Education in Life Science to Part 2 of a Biological Sciences degree programme, designated Part 1 daytime modules in the School of Biological Sciences must be taken. Students who successfully complete the core Life Science modules (listed below) will be eligible to enter Part 2 of the Environmental Sciences stream of a BSc in Biological Sciences, provided they also take the modules 'The Living World' (20 credits) and 'Physiology and Development' (20 credits) as their option modules. These may be taken at the same time as the core Certificate of Higher Education modules, but it will be more usual that they are undertaken as a subsequent 'bridging year' in The School of Biological Sciences on a part-time daytime basis.

Year 1

CD1LS1	Introduction to Biology	20	C
CD1LS2	Genes	20	C

Year 2

CD1LS3	Ecology	20	C
CD1LS4	Evolution	20	C

K01 'Getting Started' from Open Studies	5	C
Open Studies Option Component	35	C

Progression requirements

To qualify for the Certificate of Higher Education, all four Life Science modules must be passed at 40%, and in addition 40 Option credits must be gained according to the regulations governing the other programmes from which they are taken with a pass mark of 40%.

Summary of teaching and assessment

Teaching will involve lectures, structured class discussion, oral/poster presentations, concept mapping, problem solving and practical (laboratory, field and IT) workshops. Learning and understanding of lecture material will be supported through directed reading, interactive activities (e.g. virtual labs and investigations) and self-assessment tests, allowing students to measure progress against the expectations of staff. These interactive activities are readily available on the Website and CD-ROM associated with the core textbook for the programme (Campbell & Reece, *Biology*). In addition, each module will be supported by a Blackboard course.

Assessment of all the 20-credit modules will be by coursework. In each module students will undertake three assignments (one formative and two summative), which may take the form of a concept map, essay, poster or oral presentation, problem solving exercise, multiple-choice questions, team exercise, lab/field report or other written assignment (e.g short answers, simulation exercise, data analysis etc.). The varied assessment tasks will progressively develop students' study skills. CD1LS1 and CD1LS2 will introduce students to a range of written assignments, to include a brief review article, lab report and short answer questions. In addition, these earlier modules will require students to solve simple mathematical problems, construct tables and charts in Excel, and at the end of CD1LS2 will also assess students' oral presentation skills. The later modules, CD1LS3 and CD1LS4 will build further on the skills developed in Year 1, but will focus more specifically on data analysis, presentation skills and the development of student's essay writing skills.

All core Life Science modules are equally weighted.

Classifications of award are 40-60% Pass; 60-70% Merit; 70-100% Distinction.

Admission requirements

Because the CertHE in Life Science is designed to promote lifelong learning and widening participation, all applications are considered on their individual merits. There are no formal admission requirements, but students are asked attend an informal interview, and in some cases asked to write a short written piece, in order to establish their ability to undertake academic study at this level. Acceptance is based on a genuine interest in Life Science and evidence of open-mindedness and motivation. Many applicants for the Certificate of Higher Education programme will already have academic qualifications or prior learning experience in other academic discipline(s).

Admissions tutor: Dr Nina Brooke

Support for students and their learning

University support for students and their learning falls into two categories. Learning support includes IT Services, which has several hundred computers and the University Library, which across its three sites holds over a million volumes, subscribes to around 4,000 current periodicals, has a range of electronic sources of information and houses the Student Access to Independent Learning (S@IL) computer-based teaching and learning facilities. Student guidance and welfare support is provided by Personal Tutors, the Careers Advisory Service, the University's Disability Advisers, Study Advisers and the Students' Union. Students may also be directed to the Statistical Advisory Service and the 'Maths Support Centre' which provide University-wide mathematics and statistical support for non-specialists, via a face to face drop-in and appointment based service offered together with e-learning; and IT services which run basic courses in Word, Excel, PowerPoint, email and the Web.

All Certificate of Higher Education students are provided with a tailored library induction at the start of their first module, and are also given an IT induction (including how to access Blackboard). In addition to the compulsory 'Getting Started' module, the School of Continuing Education offers additional optional support to students through a range of specially designed study skills modules for students starting a Certificate of Higher Education and through an online study skills course developed by the School, 'Skills for Success', accessed via Blackboard.

In addition, CertHE Life Science students will be supported in the development of other discipline related skills through the learning on the individual modules (see module descriptions) e.g. they will have a full Saturday workshop covering study skills for biologists during CD1LS1 and the CD1LS3 will include tuition on data collection and analysis.

Explanation of the School's personal tutorial system and PARs procedures and paperwork are part of the Certificate course folder. In addition to one half-hour meeting with their Personal Tutor during any given module, students may request an individual supervision with their module tutor. There is also a substantial 'Study Skills' section in the course folder/handout.

Career prospects

Although many students on the course will already have a career, the Certificate of Higher Education in Life Science may enable a change of direction or advancement. The skills developed in the programme may be transferred to any career that requires effective communication, especially in written form, information gathering and handling, conceptual and creative thinking. Obvious careers which students could work towards include education, work in industry (Pharmaceuticals, biomedical, agrochemicals), the government service (research institutes and bodies such as the Environment Agency) and other public bodies (hospitals, local conservation units). As numerate scientists they also enter a wide variety of commercial and business occupations. For any employer, completion of the Certificate demonstrates that students can successfully apply themselves to an academic course and that they can manage their personal time effectively, and take personal responsibility for their intellectual development. The Certificate of Higher Education in Life Science also trains students for progression to Higher Education at 'I' and 'H' level, where they may continue to gain the skills and knowledge to work in the Life Sciences (There are particular progression requirements for undergraduate full-time Degrees in The School of Biological Sciences in the University. For further information contact the Teaching Office, School of Biological Sciences.

Opportunities for study abroad or for placements

There are no opportunities for study abroad.

Educational aims of the programme

The Certificate of Higher Education in Life Science aims to contribute to students' general education through involvement in the process of scientific investigation and understanding of biological principles, and develop students' ability to make informed evaluations about contemporary applications of biological knowledge to modern society. Finally the programme aims to provide support for the improvement of the skills needed for the communication of structured and coherent arguments in scientific writing and oral presentations, and in the analysis and interpretation of biological evidence.

Programme outcomes

Knowledge and Understanding

A. Knowledge and understanding of:

1. the basic nature of the discipline of biology, its methods and approaches
2. the fundamental principles of the more specialist topics of genetics, ecology and evolution, and the ability to transfer appropriate knowledge and methods from one topic to another
3. the evolving state of knowledge in the rapidly developing science of biology and its value in society
4. some of the contemporary issues in modern biology: the environment, genetics and biotechnology, and evolution

Teaching/learning methods and strategies

The first module is specifically designed to provide an introduction to the wide scope and approaches to the study of biology. The second, third and fourth modules reinforce these basic biological principles and approaches by transferring them to the study of three important topics. All four modules introduce students to some of the debates and issues connected with the study of Biology. Throughout, the short lectures impart crucial information and perspectives while the complementary discussion, problem solving workshops and practical work develop a deeper understanding of biological concepts.

Assessment

Knowledge and understanding will be assessed by coursework. Coursework is varied, and may take the form of an essay, oral/poster presentation, problem solving exercise, multiple-choice questions, team exercise, lab report or other written assignment. Students will undertake some assessments 'under timed examination conditions'.

Skills and other attributes

B. Intellectual skills – able to:

1. evaluate the appropriateness of different approaches to solving problems
2. use appropriate terminology confidently and accurately
3. manipulate and analyse numerical data
4. locate, synthesise and evaluate information from scientific data and literature accurately and reliably and to sift and integrate this information into coursework assignments
5. collect and integrate evidence to construct and test hypotheses
6. participate effectively in group work
7. reflect on their development as adult learners

Teaching/learning methods and strategies

Through specific focus on topics, issues and texts in group discussion, practical work and personal study, students are enabled to develop critical modes of enquiry about the selection and treatment of material and data. The research and analytical skills needed for problem-solving and for the accurate and reliable communication of the results of their work are practised in written assignments and presentations.

Feedback on an individual basis encourages reflection on strengths and areas for improvement in coursework, and the PAR scheme of personal tutorials enables students to reflect on their development and future progression as adult learners.

Assessment

Coursework test all aspects of intellectual skills.

C. Practical skills – able to:

1. conduct practical laboratory and fieldwork safely and successfully
2. communicate the results of scientific experiments accurately and reliably

Teaching/learning methods and strategies

Practical laboratory skills form an integral part of the modules and are conducted both in the laboratory and the field. In some modules work is laboratory or field based and data are used to produce reports.

Assessment

Laboratory/field reports test the students' assimilation and ability to use these skills.

D. Transferable skills – able to:

1. communicate effectively both orally and in writing
2. ability to work independently and listen and contribute effectively to group discussions and other team activities; recognise and respect the views and opinions of other team members
3. locate, select and critically evaluate information using the library, internet and other written sources
4. analyse and present information using IT resources
5. be numerate and capable of approaching problems in a logical and structured manner
6. work to deadlines and manage their time effectively
7. demonstrate a responsible attitude to attendance and participation in scheduled course activities

Teaching/learning methods and strategies

In all the modules students will be introduced to the IT and library resources of the University, and then taught how to present their findings in a coherent, numerate and timely manner, whether verbally or in writing. Throughout the emphasis will be on participation, responsible attendance and support for their fellow students. As part of the PAR process students will be asked to reflect on how they have developed both subject based and key skills that may be of relevance outside their course and in their futures.

Assessment

Coursework will test the students' ability to communicate, to meet deadlines and to use the academic resources effectively. The presentations and group discussions will test these abilities through the use of verbal communication.

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 he/she 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 the module description and in the programme handbook. The University reserves the right to modify this specification in unforeseen circumstances, or where the process of academic development and feedback from students, quality assurance processes or external sources, such as professional bodies, requires a change to be made. In such circumstances, a revised specification will be issued.