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**SRUC HNC Countryside and Environmental Management**

**Flexible Leaning**

**Module Guide (Extract from Course Handbook)**

# Biology: An Introduction

A basic knowledge of biological processes is essential for anyone studying ecology and conservation management. However many students have had no formal biological education and find difficulty understanding the interactions between organisms and their environment. This module will give a grounding in biology. In such a short time topics can only be covered briefly but throughout the unit the emphasis will be on the ‘function’ of the processes in the wider environment rather than the details of how they work. Topics covered will range from cell structure to genetics and evolution.

This is a vital topic for anyone involved with biology at any level, providing an understanding of natural systems and processes which is essential to understanding how living organisms operate.

# Ecology & Ecosystems

Ecology is a wonderful subject in its own right and very useful in the effective management of nature conservation sites.

We introduce the key ideas in this unit - so even if you have no background biology, geography or ecology you should have few problems. The aim is to slowly build up your ecological knowledge and understanding so as you become a confident, competent ecologist who can relate to habitat management issues. An important aspect of the unit is experiencing a range of habitats and thinking about how they work in ecological terms.

Studying ecology is as much about wearing welly boots and using your eyes as it is about staring in textbooks!

Bring an enquiring mind, a notepad and pencil and enthusiasm! The ability to laugh in the rain is very useful!

Ecology is vital to understanding the processes and systems in the natural world, and essential for effective management of the countryside.

# Biodiversity Conservation

Nature conservation and biodiversity have become familiar subjects for many of the general public but they are frequently misunderstood. This module will introduce students to the concepts which underpin nature and biodiversity conservation, and the policies, legislation and organisations involved.

The questions of what conservation is and why it is important are rarely looked in depth but are essential to a full understanding of the topic. These issues will be discussed and students will be encouraged to come to their own conclusions and to appreciate that there is no single answer. The legislative and policy framework for conservation is complex but the main aspects will be covered. Similarly the statutory and voluntary organisations who implement and influence conservation are many and varied but the principal players will be discussed.

As conservation practitioners, graduates will meet many people who have an imperfect understanding of conservation or may even be hostile to the concept. It is essential that graduates have themselves thought about the “what and why” of conservation if they are to influence others.

At a different level the decisions which need to be made about countryside management in general and biodiversity management in particular need to be based on a sound understanding of underlying principles and legislative and organisational framework.

# Classification & Identification of Organisms

The effective management of the countryside depends on a knowledge of what lives there. Unfortunately few people have a sound and broadly-based understanding of British plants and animals. This unit will introduce students to a range of identification techniques including the use of keys, field notes, sketches, tracks, feeding signs and droppings. As well as being able to recognise a range of species students should be able to use their newly acquired skills to identify unknown organisms.

At the same time students will need to know a little about how animals are classified and named, particularly why scientific names are used.

A sound knowledge of the organisms found in the countryside adds enjoyment to leisure activities but is also crucial to decisions about countryside management. The unit will introduce students to the necessary skills but the perfection and development of the skills will depend on practising them in the field. Expertise can only be developed by constantly using identification techniques in college, the workplace and leisure time.

The ability to identify species is vital in performing ecological surveys, effective conservation management and conservation of biodiversity.

# Interpretation: An Introduction

This module aims to develop understanding of the nature and role of environmental interpretation, and also develop skills in carrying out a variety of interpretive techniques.

The course will cover: the appraisal of the effectiveness of interpretive provision; its management and conservation role and preparation and delivery of interpretive programmes.

Practical application is a major part of the module and will include direct contact with people e.g. talks; guided walks and also indirect contact, e.g. leaflet production. The award-winning Bennachie Centre will be a major focus of good practice.

Environmental interpretation is a key component of work within the countryside management sector and interpretive experience and skills are often a pre-requisite for employment in this field. The module therefore provides a vital grounding for career development.

# Countryside Recreation and Access

This module provides an overview of countryside recreation and visitor management.

Content includes: development of countryside recreation within a legal and historical context; visitor motivations and behaviour; visitor management techniques; visitor safety issues. The inter-relationships between visitor and site, amenity and conservation will be explored.

An understanding of countryside recreation underpins countryside work. Experience and understanding gained through this module will therefore be of direct relevance in career development. The module provides an introduction to more advanced and specialist studies of recreational provision.

# Leadership of Countryside Activities

This module is designed to develop skills in leadership and supervision of small groups of people in situations relevant to countryside work. Leadership roles and approaches will be covered, as will legal and safety responsibilities, planning and organisational matters. Principles of ‘access for all’ will be included. Practical work will allow students to take responsibility for all organisational aspects of a group activity.

Opportunities to practise decision-making will be an important feature of the Unit. Emphasis will also be placed on the application of group management principles to appropriate situations e.g. guided walks; practical conservation tasks.

Work with groups of people forms an integral part of countryside management work. This module is therefore important in career terms, offering a basis for students to provide people with quality and safe experiences in the countryside.

The module also services as an introduction to studies dealing with groups of more specialist situations such as outdoor pursuits.

# Geology & Geomorphology

Patterns of land use, the nature of natural and semi-natural habitats, vernacular architecture and topography, to take a few examples, are all influenced by the nature of soils whose distribution is in turn determined by the underlying geology and the topography of the landscape.

This module is designed to provide students with a basic understanding of the fundamental physical components of the natural landscape. The interrelationships between the underlying rock structure (geology), the action and products of glaciers, rivers and other agents of erosion and deposition (geomorphology), surface topography, and the formation and nature of soils (pedology) are explored.

Emphasis is placed on providing a sound foundation of basic principles. Case studies, including the use of geological, soil and topographical maps, and field work are used to develop an integrated understanding of the topics included in the module.

Earth Sciences are a vital underpinning subject for anyone interested in the countryside and the wider environment. Following the module students should have sufficient knowledge to interpret basic geological and geomorphological information and be able to make outline interpretations of the physical influences on the landscape of familiar areas.

# Rural Land Use in Scotland

**This module is designed to give a background appreciation of a variety of land use systems, historically & to the present day. Students are encouraged to consider current and potential future land use issues, and the interactions between land uses. The module deals with agriculture, forestry and a variety of other land uses, together with the influence of land use policies and how these change.**

Anyone who wishes to work in the countryside needs to be aware of the role and operation of the major primary land-use systems.

Completion of this module will enable you to appreciate the interactions between the various interests involved in land use issues in the countryside. This then will make you more effective in routine contacts with land users, land owners, their representatives and the general public.

# Environmental Awareness

This module is designed to familiarise students with aspects of environmental concern and action at local, national and supra-national level. The concept of sustainability through society, economy and environment is explored. A key aim is to develop each student’s environmental competence, particularly via the development of a personal action plan.

The relevance and importance of environmental issues and action at the present time can scarcely be over emphasised. Employers in all fields require a basic level of environmental awareness which this unit provides. It is essential therefore that students have an adequate understanding of the range of issues involved and possible actions for sustainability.

# Information Technology: Applications Software 1

The aim of this module is to introduce the use of a range of computer application packages - word processing, spreadsheet, presentation software and databases. Little or no prior experience of the use of computer systems is required. The emphasis is on practical work and candidates will produce letters, reports, budgets, and data lists.

Assessments consist of practical exercises, completion of worksheets and written responses.

Information Technology is a key skill in many jobs. Students will have sufficient experience to be able to use a variety of business computer systems, and general skills should allow quick conversion to new and different application packages.

The knowledge and skills gained in this module will help students to prepare material for a number of other modules where good quality reports, and calculations are required.

# Scottish Rural Development

The aim of this module is to introduce students to the planning system – why it is in place, how it operates and the place it holds in enabling environmental objectives and resources to be protected. The history of planning is also looked at to give students a perspective on how the system has evolved. The use of national legislation to inform decision making at a local level is another important aspect.

Assessments consist of practical exercises, completion of worksheets and written responses.

Planning is changing to include environmental issues as one of its key themes. Knowledge of how the planning system accesses information and deals with its business is an important aspect of conservation, environmental management and any built environment position. The knowledge and skills gained in this module will help students to take a considered view of development at a national and local scale.

# Pollution & Waste Management: An Introduction

The aim of this module is to introduce students to the systems and legislation required to deal with waste and pollution. Guidance is examined on an international, regional and local scale. Municipal waste management is an important aspect requiring action in the short term if targets are to be met. The basic systems for treating dirty water, sewage and other potential pollutants are also covered.

Assessments consist of practical exercises, completion of worksheets and written responses.

How we deal with waste is now an important aspect of any business operation, as is the ability to discern possible pollution problems which may lead to enforcement or prosecution if not managed efficiently.

The knowledge and skills gained in this module will help students to take a considered view of key environmental issues.

# Economic issues: An Introduction

The unit informs candidates of the basic principles of economics. It is important that students realise that the environment is looked on by economists in the same way as any other “good” or product, and as such is to a certain extent managed using economic theory of supply and demand. The relationship between taxes, national income and environmental controls are also important factors.

If we are to have a clean environment and make best use of scarce resources, it is important that the environmental community are able to understand and engage with the economic theorists and understand how taxes, subsidies and other economic instruments control consumption. The knowledge and skills gained in this module will help students to take a considered view of key environmental issues.

# Chemistry & Physics for the Life Sciences

**This module gives students a solid understanding & awareness of the basic practical & theoretical chemical & physical principles that can be applied to particular subject areas. It introduces basic concepts in the fields of physical & inorganic chemistry & physics. These include atomic structure, bonding, chemical units and reactions, the properties of acids & alkalis, buffers & redox reactions; physical properties of matter, radioactivity, environmental factors, diffusion & measurement of physical properties; heat & energy transfer, the laws of thermodynamics, kinetic energy & energy calculations.**

# Graded Unit 1

The aim of this module is to integrate key modules in the course in such a way that students can produce a holistic piece of work which can be used to grade their level of achievement. It will be a project style assessment requiring the student to plan the work, manipulate data and produce a finished report.

Assessments consist of planning, research, analysis and reflection.

Outwith education, problems do not come along singly – they are usually associated with a combination of smaller sub-problems. This unit looks to develop skills that will allow students to operate in the real situations that they might find in future employment. Planning work, carrying out an investigation and reporting findings in a form accessible to others is an important skill for life.

The knowledge and skills gained in this module will help students to integrate key areas of study and achieve a level of pass reflecting their performance in the unit.