



**Bournemouth
University**

Environmental Science BSc (Hons)

School of Applied Sciences

Environmental Science integrates the natural sciences and considers how a wide range of factors may impact on the environment. It attempts to understand how both anthropogenic and natural forces result in the processes of environmental change such as global warming, ecosystem pollution and habitat loss.

Start Date:
September

Duration:
3 years full-time with 2 x 5 week placements (or 4 years with a 40 week placement); 6 years part-time

UCAS:
F410

Entry Requirements:
For 2012 entry: 300 tariff points, typically from 3 A-levels or equivalent
For 2013 entry: 300 tariff points, including 100 from one required subject (e.g. B at A-level). BTEC Extended Diploma: DDM

Required subjects:
At least one of the following subjects: Geography, Environmental Science, Biology, Chemistry, Physics, Maths

Recommended GCSEs:
A minimum of 5 GCSEs grades A* - C including a Science, Maths and English or equivalent qualifications

If English is not your first language:
IELTS (Academic) 6.5 with minimum 5.5 in each component or equivalent

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Web: www.bournemouth.ac.uk/askbu

Open Days:
To register for an open day log on to:
www.bournemouth.ac.uk/opensdays

For more course information:
www.bournemouth.ac.uk/courses/bses

Why choose this course?

- Gain relevant employment skills within a wide range of local and international work placement opportunities
- Contribute to cutting-edge environmental science research by getting involved in academic staff research activities
- Environmental scientists will be in demand due to the severe challenges that we face with population growth and global warming.

Course Overview

The study of Environmental Science also includes an appreciation of how technology and regulatory processes can be applied to prevent environmental degradation and an awareness of practical remediation methods. Professionals working in the field of Environmental Science need to be able to combine an understanding of science with knowledge of the legislative frameworks and the regulatory authorities for environmental protection.

This course will provide you with a strong, broad foundation in Environmental Science and includes both a theoretical and applied perspective. You will be trained in a substantial range of transferable skills in laboratory work, computing, data analysis, report writing and project management.

This course is particularly designed to appeal to students who wish to begin their degree by studying a generic science base in their first year and then moving towards a more customised pathway in their final year which will suit the areas of interest they have developed during the second year of their degree. A key part of this is the third year research project where you will have the opportunity to work closely with an academic's research programme.

Course Content & Unit Overviews

Year 1

Investigative & Reporting Skills

Providing you with the core skill set necessary for undergraduate study in a science subject, this unit will particularly develop independent learning. By the end of the unit you will have completed a simulated science-based investigation exercise, demonstrating the application of a range of core skills as an investigative scientist.

Topics in Contemporary Science

You will be exposed to a range of contemporary themes in science, either driven by research taking place within the School or by topical science agenda. The unit is delivered by a seminar series covering all aspects of the science relevant to the School of Applied Sciences. Topical or popular issues are examined and the science that underlies them explored.

Practical Skills

The practical and field skills necessary for undergraduate study in a science subject specifically within the fields of archaeology, environment & biological-forensic science will be covered. You will be taught through a series of short courses and self directed learning exercises designed to develop your independent learning skills.

Earth, Environment & Society

Key aspects of our physical environment will be explored in this unit, building an understanding of the way in which these interact and impact the human environment. The unit provides a foundation in Earth Sciences and Physical Geography on which detailed knowledge can be built in the second and third year.

Ecological Conservation

The ecological, human societal and ethical issues which underpin conservation ecology will be considered in this unit. You will be introduced to key issues in lectures, and asked to explore them through seminar discussions and fieldwork. You will be asked to consider how these key issues integrate to affect the ecological conservation of a range of case studies.

Chemistry

You will be provided with an understanding of some aspects and processes within fundamental chemistry and analytical chemistry and develop your laboratory skills. The unit will predominately be delivered through lectures and practical laboratory sessions. The laboratory sessions will enable reinforcement of the theoretical concepts by dealing with experimentally generated data

and will allow for one-to-one and small group discussions.

Year 2

Applied Geospatial Science

You will develop your expertise and knowledge in the area of Geographic Information Systems (GIS) and geospatial science. The unit aims to provide you with an understanding of the principles underpinning spatial information science and its associated technology. This unit will provide you with the ability to manipulate and interrogate spatial data of various kinds whilst developing expertise in GIS and modelling. Emphasis is placed on data capture, analysis and the application of spatial information science for geographic and environmental decision making.

Ecology & Ecosystems Management

The theoretical principles in ecology and their application to ecosystem management and protection will be explored in this unit. The importance of human prehistoric, historic and current influences on ecosystems will be explored, thus linking natural and cultural heritage.

Environmental Pollution

This unit aims to develop knowledge and understanding of a range of polluting impacts that human activities have on the environment. It will provide you with an overview of the causes of environmental pollution, the harm caused to the environment and the strategies used to both prevent and remediate negative environmental impacts.

Field Research: Environment

By the end of this unit you will have developed your ability to carry out field based research, appropriate to this course. You will develop an understanding and ability to formulate field research problems, design appropriate research strategies, gather and analyse data methodically and appropriately, report the results and manage the process effectively.

Evolution & Wildlife Conservation

Providing you with an understanding of the factors involved in the evolution and long term conservation of species, this unit considers how natural processes and humans have interacted to determine large-scale patterns of biodiversity and evolutionary change.

Option unit: choose one of the following:

Introduction to Toxicology

The basic principals of toxicology will be explored in this

unit, designed to offer foundation knowledge for those intending to study toxicology at higher levels or for those intending to study subjects peripheral to toxicology or where a basic understanding of toxicology will be relevant.

Marine Geography

The geography of the marine environment will be covered in this unit through consideration of the key resources found in marine and coastal environments and their management frameworks, including key factors affecting marine and coastal biodiversity. An important element of this unit is the collection and interpretation of marine and coastal data.

Year 3

Independent Research Project

The Independent Research Project provides you with an opportunity to gain experience of research in a topic of your choice relevant to your degree and to demonstrate your ability to report that research. Such experience is considered essential for those students interested in pursuing academic and/or professional research at a higher level of responsibility and achievement.

Option units: choose four of the following:

Earth Surface Processes & Landforms

Geomorphological research will be introduced, using selected case studies thereby developing your ability to design and execute research projects and undertake professional practice within geomorphology.

Environmental Forensics

The range of issues covered by the term Environmental Forensics will be explored in this unit. These range from pollution investigations to wildlife crime at local, national and international levels. You will also address techniques and the organisations associated with the investigation of environmental crimes.

Freshwater Resource Management

The theory and practice for issues relating to the conservation and management of freshwater resources will be covered in this unit. It covers a range of aspects of freshwater resource management including sustainable development, conservation and key issues from a planning policy and decision making perspective. By providing a framework for you to actively make managerial decisions, the unit enables problems to be identified, analysed and solutions to be proposed including the promotion of sustainable communities and public participation in the planning process and environmental assessment.

Marine Conservation

This unit aims to develop practical knowledge and understanding of the conservation and management of marine biodiversity, fisheries and underwater heritage resources. You will also examine the formulation of policy and the legal processes and mechanisms that are applied to the conservation of marine and coastal environments.

Environmental Remote Sensing

The unit develops your expertise and knowledge in the area of environmental remote sensing, providing a detailed understanding of the principles of remote sensing as a source of spatial information. This unit will provide you with the ability to manipulate and interrogate remotely sensed data of various kinds whilst developing expertise in image analysis and integrated Geographical Information Systems. Emphasis is placed on data acquisition, analysis and the application of remote sensing science for environmental assessment and decision making. Indicative topic areas include land cover mapping, climate change monitoring, coastal management, landscape ecology, habitat characterisation, urban modelling, archaeological prospecting, pollution or hazard mapping.

Wildlife Behaviour & Habitat Conservation

The aim of this unit is to enable you to appreciate how wildlife behaviour affects the success of habitat management for conservation and to develop the skills required to evaluate ecological data in the context of conservation ecology.

Emergence & Extinction: Reconstructing Pliocene & Pleistocene Environments

This unit aims to provide you with an understanding of past and current theories surrounding the nature and effects of environmental change during the last 10 million years. Various lines of evidence are considered including geomorphology, palynology, ice cores, fossil flora and fauna and genetics. The course will include aspects of evolutionary theory and will consider theories relating both the emergence and extinction of species to wider environmental change. Consideration will also be given to differing approaches to understanding broad ecological changes and to competing hypotheses regarding both individual and mass extinctions.

Advanced Environmental Law & Planning

In a complex world, functioning legal rules and other governance tools are mainstays of the movement towards environmental protection, security and sustainable development. Laws on permitting, standards, compliance and enforcement mechanisms, voluntary instruments, liability regimes and citizens' environmental

rights all play a part in translating policies, goal and social objectives into reality. In this unit we aim to critically consider the dynamics of the legal and policy applications of planning and environmental law and its role in environmental protection.

Placement

The placement provides you with the experience of how an organisation operates, as well as an opportunity to enhance your personal development and future employability. The placement plays an important role within the degree structure, complementing the academic course and allowing you to begin to put theory and competencies into practice as well as develop new skills.

Fieldwork

We make extensive use of our unrivalled local environment, which includes the UNESCO Dorset and East Devon World Heritage Coast, Poole Harbour and the New Forest. Dorset is one of the most diverse counties in Britain for many groups of organisms, including plants, reptiles, insects and birds.

Resources & Facilities

We have dedicated laboratories that have a comprehensive range of analytical, technical and experimental facilities, including state of the art field equipment, extensive reference collections of materials, artefacts and both human and animal skeletons to give you vital hands-on experience.

Conservation Ecology & Environmental Science Group

This course builds on the considerable research expertise in the Schools Conservation, Ecology and Environmental Science Group. The Group undertakes internationally recognised research on environmental change and its impacts on biodiversity. Specialist interests include remote sensing, the ecology of birds, fish, invertebrates, mammals and plants, in terrestrial, freshwater and marine environments.

Research is designed to support policy development and implementation, and we have strong links with conservation practitioners and policy makers locally, regionally and internationally. These links ensure that much of the research undertaken is directed at tackling problems of recognised significance to commerce and industry, as well as to the public sector, all of whom demand innovative meaningful research.

Research generated by the Group informs and ensures that courses within the School remain at the cutting edge, meeting both national and international demand for professional environmental graduates.

Career Opportunities

Graduates from this course have the specialised set of skills required by employers who demand environmental specialists that can work within our increasingly regulated environment.

Employment opportunities exist in a wide range of organisations including government agencies, local authorities, environmental and landscape consultancies and multi-national companies, as well as within the voluntary sector.

The University reserves the right to introduce changes to the information given, including the addition, withdrawal, relocation or restructuring of courses.