

School of Applied Sciences

This course involves the application of science in archaeological, physical anthropological and forensic contexts. It provides students a distinctive blend of laboratory and field science within a rigorous academic framework that bridges the sciences and humanities.

Start Date:

September

Duration:

3 years full-time with a 5 week placement (or 4 years with a 40 week placement); 6 years part-time

UCAS:

VF44

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: Chemistry, Biology, Physics, Human Biology, Maths, Applied Science

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

Contact askBU enquiries service:

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Email: askbuenquiries@bournemouth.ac.uk

Web: www.bournemouth.ac.uk/askbu

Open Days:

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

For more course information:

www.bournemouth.ac.uk/courses/bsaafs

Why choose this course?

- Internationally renowned archaeology department with one of the best equipped archaeology field schools in the UK
- Well established reputation for both traditional and forensic archaeology and anthropology
- Strong focus on both laboratory and field science.

Course Overview

This course will prepare you for a wide range of career opportunities in archaeology, physical and biological anthropology, forensics and other applied sciences.

Increased professionalism, together with developments in science and technology, mean that both archaeological and forensic sciences require high quality scientists. There has also been an increase in the application of forensic archaeology and anthropology within the expanding arena that is medico-legal forensic science, which now encompasses disaster victim recovery and identification in the aftermath of terrorist bombings and natural disasters.

The School's 'crime house' facility, with an attached purpose designed lab and CCTV monitoring, is available for forensic students to carry out full-scale simulated crime scene investigations. You will gain experience in how to collect evidence for criminal prosecutions including fingerprinting, footwear impressions and blood spatter analysis for example. The School has a world-class range archaeological fieldwork equipment for your use and fully equipped analytical laboratories. You will also be able to gain experience through archaeological or forensic placements in the UK and abroad.

Bournemouth is ideally situated, with some of Britain's most iconic archaeological and historic sites, such as Avebury, Stonehenge, Maiden Castle, Corfe Castle and Fishbourne Roman palace, all within easy travelling distance.

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.

Archaeological Practice

The knowledge and skills essential to the aspiring archaeologist practicing within the modern professional discipline of archaeology will be covered in this unit. It will also provide you with an understanding of the interconnectedness of data derived from field situations and that recovered from archived sources in an ongoing analytical process of refinement and reinvestigation. Successful completion of the unit will enable you to understand the context of archaeological data, which will support and enhance aspects of structural, artefactual and palaeo-environmental analysis delivered at all levels in the courses in which it lies.

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.

Biology

The fundamental concepts of biology, including cell biology, molecular biology, anatomy and physiology will be studied in this unit. It will explore the molecular basis of life, physiological processes and the function, structure and regulation of the most important organ systems in animals. You will also develop core bioscience skills, such as practical ability, data handling, time management and team work through laboratory classes.

Year 2

Applications of Archaeological Science

This unit will develop your understanding of how thematic archaeological research questions may be addressed through the use of archaeological scientific techniques and approaches. Knowledge of case studies will be developed to promote understanding of the potential applications of archaeological science to investigate the behaviour of past human societies.

Field Research: Archaeology

Providing you with the practical understanding of the aims, strategies, and methods of one or more areas of relevant fieldwork, this unit covers: archaeological excavation, field survey, landscape, underwater investigation, or building recording. Attention is also given to evaluating the significance and meaning of recorded evidence, reinforcing and extending concepts delivered in the first year. In addition, the unit aims to develop team skills, as well the capacity for each individual to carry out practical tasks, solve problems and to lay foundations for more advanced teaching and project work.

Environment Archaeology & Paleoecology

The aim of this unit is to introduce you to the principles and practice of Environmental Archaeology and palaeoenvironmental reconstruction. The unit will provide an overview of site formation processes, the types of environmental evidence encountered in the archaeological record, and the appropriate sampling strategies used to recover them. Examples of the interpretation of environmental evidence will be provided through archaeological case studies. The final lecture will demonstrate how many of the environmental proxies used in Environmental Archaeology are transferable to forensic sciences, focusing on the specific example of palynology.

Human Osteology

This unit provides an introduction to the basic principles of analysis and interpretation involved in the study of

skeletal remains of modern humans. It introduces the concepts and uses of biological data in examination and analysis of human skeletal remains from archaeological and forensic contexts and involves the determination of basic bioprofiling characteristics including sex, age at death, ancestry and stature. Attention is also given to considering skeletal data at the level of populations as opposed to that of individuals.

Forensic Science

The basic scientific and analytical principals underlying the practice of forensic science will be explored in this unit. You will be introduced to a range of basic case types and to the analytical techniques commonly employed in forensic casework.

Biochemistry

This science-based unit is designed to enable you to be conversant with biochemical aspects of modern biological sciences whilst serving to provide a foundation for final level study such as Biomolecules and Toxicology in the third year. Supported by some of the laboratory practical sessions, the unit will deliver the contents of four core parts of modern biochemistry, namely structure of macromolecules, transmission of genetic information, function of proteins, and metabolic pathways.

Year 3

Applied Anthropology

Introducing you to the wider applications and potential of research in Biological Anthropology, you will explore the analysis and interpretation of skeletal pathology and trauma and examine ways in which the study of disease can inform about health status in past societies. Attention is also given to considering how such pathology can provide important information that may lead to the identification of deceased individuals recovered from forensic contexts. Consideration is also given to the ways data is captured and analysed at the level of populations and of both the problems and prospects such analysis carry.

Biomolecules

By the end of this unit you will be conversant with the concepts and approaches of holism compared with reductionism in modern biological sciences. It will review the principles of biology and modern biotechnologies from molecular levels to systems biology, such as DNA analysis, DNA profiling, functional genomics, gene expression and cDNA microarray, proteomics and protein interactions, epigenetics, bioinformatics, recombinant DNA, and biotechnology.

Advanced Forensic Science

You will enhance your knowledge and critical thinking skills associated with the scientific and analytical principals underlying the practice of forensic science in this unit. You will gain in depth knowledge of key areas of forensic science.

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 one of the following:

Archaeological Management

The principles and practice of conservation and management of the historic environment in the UK will be explored in order to prepare you for professional employment in archaeological and conservation organisations. It will examine the professional environment, legislative background and organisational context of the historic environment sector in the UK.

Later Prehistoric Britain

By the end of this unit you will have a detailed critical understanding of the archaeology of the later Bronze Age and Iron Age Britain, broadly 1500BC-AD50, in Britain in its Continental context. The unit will provide a broad knowledge of chronological and regional variations within later prehistoric Britain and also contribute to the knowledge and understanding of the development of archaeological theory.

Neolithic & Chalcolithic of Northwest England

The main aim of this unit is to provide you with a detailed critical understanding of the archaeology of the Neolithic and Chalcolithic periods, broadly 4000-2000 BC, in the British Isles and the adjacent Continental coastlands from western France to southern Scandinavia. This is one of the most formative periods in the social and economic development of communities occupying northwest Europe and includes both the transition from hunter-gatherer to farming cultures and the introduction of metallurgy. The unit will provide a broad and comparative knowledge of a selected chronological period for a selected geographical region, and contribute to a knowledge and understanding of the origins and development of archaeology as a discipline.

Primate Behavioural Ecology

The way in which primate behaviour can be interpreted will be explored from an evolutionary viewpoint, and how human and non-human primates' behavioural strategies are adapted to the environment (social and ecological) in which they live. The unit is aimed at stimulating discussion and the critical analysis of theories.

Roman Britain

You will be provided with the opportunity to explore in detail the practical and theoretical problems associated with the study of the material culture and archaeology of a distinct geographical area. The unit seeks to provide you with a solid understanding of the importance of archaeological data in the understanding and interpretation of historical chronologies.

Animals & Society

This unit aims to provide you with a detailed critical understanding of humans' interactions with animals in Britain from the Palaeolithic through to the early Post-medieval period. These interactions include the exploitation of animals for meat and other products and how animals were incorporated into burial practices and other rituals.

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

This course offers substantial archaeological fieldwork opportunities including one-day visits to sites of significant archaeological interest such as Stonehenge, Avebury, the hillforts of Dorset, the Roman villas of Hampshire and Sussex, Southampton, Winchester and Salisbury. The training excavation at the end of the first year is a 25-day field school. This year's Durotriges excavation attracted much media interest and featured on the BBC's highly acclaimed series 'Digging for Britain'.

The excavation allows you to develop a wide range of field archaeological skills including excavation techniques, survey, recording, soil description and interpretation, site safety and management, sampling and

the interpretation of the excavated evidence.

Resources and 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.

Career Opportunities

The School of Applied Sciences has an internationally renowned reputation for producing highly skilled practitioners with excellent career opportunities. Graduates from our archaeology and forensic courses have gone on to work in all parts of the discipline.

Many graduates have gone on to postgraduate study; others are now working for leading commercial units such as Oxford Archaeology and Wessex Archaeology; as well pharmaceutical companies, working as lab technicians.

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