Anglia Ruskin University

Course Information Sheet

BSc (Hons) Crime and Investigative Studies

Mode and course length – Full-Time (4 years)

Location – ARU Cambridge Campus

Awarding Body – Anglia Ruskin University. As a registered Higher Education provider Anglia Ruskin University is regulated by the Office for Students.

Overview

From crime scene to courtroom to criminal rehabilitation: get exposure to the real world of crime scene and police investigation. Learn about the impact of crime on both victim and offender, and discover how law and justice work in practice. .

Are you interested in crime, forensic science, policing and the law, but unsure which subject to study? You will cover them all on our course. We combine the crime scene examination part of forensic science with other crime-related subjects, such as policing, intelligence and the law.

This means that, when you graduate, you will have a wide range of criminal justice career options to choose from.

Use our superb crime scene rooms to learn the skills of a crime scene examiner. We'll help you to understand the practical aspects of crime and investigation, and how they affect everyday life. You will look at different types of crime, from burglary through to murder, and find out how these are investigated by the Police. You will also learn how to investigate mass disasters, such as plane crashes and tsunamis, and discover how forensic pathology and anthropology is used.

Learning about the UK legal systems and criminal law, you will find out how they affect the investigation of different crimes and how to present professional reports of your investigative findings.

Our course will explore traditional investigative methods used by the Police in addition to newer aspects of policing, such as evidence-based policing. You will also learn how to present professional reports in both a policing environment and within a court of law.

Our lecturers have first-hand experience of crime scene examination, policing and criminal justice. As well as benefitting from their knowledge, you will have guest lectures from visiting professionals and get an understanding of the workplace through visits to places such as the Crown Court, and other field trips.

Course Delivery

Our courses are delivered through teaching and learning methods which provide students with the widest possible exposure to a modern and innovative higher education experience.

These methods vary and could include attendance at lectures and seminars, undertaking laboratory exercises or work-based activities, practical work, performances, presentations, field trips, other relevant visits and e-learning through Canvas, our online learning management system.

Each course is divided into a number of 'modules' which focus on particular areas, each of which has a specific approach to its delivery. This information is published to students for each module they take via the Module Definition Form (MDF) and Canvas.

Assessment

Throughout the course, we'll use a range of assessment methods to measure your progress. This course has a hands-on approach, so a lot of your assessment will be through practical work. Your assessments will include traditional exams and

assignments, as well as your performance in practical work, presentations, mock courts and group work.

Fees

Information about your course fee including any annual fee increases or deposits (if required) can be found in your offer letter.

Additional Costs

Scientific calculator

SD memory card - £8

Fine-tipped permanent marker pens - £3

Cost of printing dissertation/individual project

CD / memory stick for dissertation submission.

1GB USB Drive

Modules

Core Modules

Year 1: Foundation in Optometry, Medical and Life Sciences

This module will provide students with the necessary skills to begin studying at level 4 in courses related to Optometry, Medical Science and Life Sciences.

Students will be introduced to the core skills necessary to succeed in higher education, including thinking critically, researching and referencing appropriately, demonstrating appropriate numeracy and ICT skills, and communicating effectively verbally and in writing.

In addition to these fundamental study skills, Students will be given an introduction to the various scientific disciplines underpinning the life sciences. Fundamental mathematical skills will be covered in order to support students' other subjects and give them confidence in manipulating data.

Students will be introduced to molecular and cellular biology, and how these fields are applied to real-world investigations. Students will also study the biology of micro and macro organisms, with reference to both human and animal structures.

Students will be introduced to the core concepts of chemistry, with a particular focus on organic chemistry, and will also be given a grounding in the core principles of physics, applied to living organisms.

The module is made up of the following 8 constituent elements:

- Interactive Learning Skills and Communication (ILSC)
- Information Communication Technology (ICT)
- Critical Thinking
- Maths for Scientists
- Cellular Biology
- Biology – Physiology
- Chemistry
- Physics for Life Sciences

Year 2: United Kingdom Legal Systems and Law for Forensic Scientists

This module will introduce students to the three separate legal systems of the United Kingdom: England and Wales, Scotland and Northern Ireland. We will look at the development of law in the English, Scottish and Northern Ireland legal systems and will examine the Jury system and the investigation of crime with each of these systems. We will look at the development of law in England and Wales, Scotland and Northern Ireland, examining the different members of the legal profession, requirements of

juries and the investigation of crime within each of these systems.

Close examination will be made of the powers and requirements relevant to the Scene of Crime Officer (S.O.C.O.) /Forensic Scientist. Detailed examination will be made of the laws of evidence as they relate to the S.O.C.O./Forensic Scientist and also of the codes of practice of the Crown Prosecution Service (CPS)/ Procurator Fiscal. As part of the module, the students must visit the magistrates/crown court in order to observe how trials are conducted in UK courts, which will help them get a better understanding of the criminal justice system during trials.

Year 2: Applied Science for Forensic Investigators

This module is designed to allow students to develop an understanding of the basic scientific principles which underlie forensic investigations.

Students will be introduced to the broad scientific disciplines within forensic science, including chemistry, biology, physics and mathematics. Students will be provided with the analytical skills necessary to interpret forensic evidence and apply scientific principles to forensic case studies.

Students will learn about the periodic table and properties of elements, atomic structure and chemical bonding, as required as a basis of forensic analytical chemistry. In addition, chemical equations, stoichiometry and dilutions relevant to forensic and investigative sciences will be covered. Students will also study the basics of molecular biology, including the structure and function of DNA and RNA. They will be introduced to the polymerase chain reaction (PCR) and short tandem repeats (STRs) and how these are used in forensic and investigative sciences. Students will also learn basic biochemistry and human anatomy, and how biological evidence may be used in forensic cases. In addition, basic physics, as required in areas such as blood spatter analysis and ballistics, will be introduced.

Each lecture will be followed by a tutorial where students will be able to apply the scientific principles learned to relevant forensic situations. Relevant areas of maths will be introduced in a series of workshops, to familiarise students with Microsoft Excel and allow student learning through interactive problems.

A practical element is also included in this module, for students to gain competence and confidence in performing basic laboratory techniques. These practical sessions include an introduction to wet lab techniques (e.g. the use of micropipettes), microscopy, presumptive testing, and thin layer chromatography (TLC).

Year 2: Introduction to Forensic Methodologies

‘Introduction to Forensic Methodologies’ provides a comprehensive introduction to the fundamental practical skills and knowledge base required of anyone seeking a career in forensic or other investigative sciences. The module covers key aspects ranging from the management of crime scenes and the appropriate recovery of items found within them, to the interpretation and analysis of evidence. Scientific principles will be applied to situations encountered in forensic investigation.

A range of the most common types of evidence will be introduced, along with the techniques used to examine them. The practical component of the module will enable students to master basic laboratory skills used within analytical sciences, including the appropriate handling, packaging and preparation of specimens. Issues relating to the continuity of evidence for legal purposes will be presented throughout the module.

Incorporating personal development planning, ‘Introduction to Forensic Methodologies’ provides the grounding upon which the students' forensic knowledge will be based.

Year 2: Investigative Skills

Crimes can be distinguished between volume (minor) and serious crime. Although the aim of investigation by the police is to solve crime, regardless of its severity, the various elements of the investigation process will differ between the two types of crime. This module will enable students to gain relevant knowledge and understanding of the role of the investigator, as well as the processes involved in the investigation of volume and serious crimes.

National policies and legislative framework set out the parameters used by the police during criminal investigations. This module will explore policies and framework in detail, enabling students to develop an awareness thereof, and to demonstrate their ability to apply relevant techniques in an investigation. Additionally, students will be able to identify and critically appraise the context

out of which such practices developed.

During this module, students will review case studies and identify investigative skills used. During practical sessions, they will have the opportunity to develop a critical understanding of the skills required to obtain information in a criminal investigation.

In the assessment, students will be required to describe, analyse and evaluate the strategies applied by the police, and the procedures with which police investigators comply.

Year 2: Introduction to Police and Forensic Photography

This module will introduce students to the theoretical and practical application of photography in the forensic context.

The module will be delivered through a series of lectures, introducing various aspects of police photography, and practical sessions developing core skills required by Police photographers and crime scene investigators (CSIs). This skills are also transferable to laboratory scientists who undertake photographic recording of evidential material in the forensic laboratory.

Introduction to digital single lens reflex cameras and their basic functions will be made. This will include the choice of f.stop and associated shutter speed, using the through-the-lens metering systems to produce correctly exposed images. Additionally, the use of depth-of-field in forensic photography and exposure control will also be covered. These key skills will underpin the students' ability to develop further understanding regarding the practical approaches to crime scene photography.

The use of further technical photography equipment will be introduced, including the use of flash.

These skills will be utilised in practical sessions enabling students to produce evidential photographs as they would be produced in the criminal justice system.

Students will be introduced to the approaches taken for general crime scene photography, in addition to contextual and close-up evidence-specific photographs. This will include the use of evidence markers and scales where appropriate. The production of 1:1 photographs is essential in forensic comparison of footwear marks and fingerprints. Forensic photographers are required to understand and practise the specific requirements in capturing finger mark and footwear images and students will be taught these skills.

An additional skill requirement of forensic photography is to take photographs of injuries, to be used for charging purposes, for interpretation by medical practitioners and for presentation in court. Students will have the opportunity to develop practical skills in injury photography.

Further to these practical skills, students will also attend lectures to develop further their theoretical understanding of the role of the forensic photographer. Learning will include the use of photography in fluorescent examination of crime scenes and evidence recovery, photography at the scene of road traffic accidents and the photography of the deceased.

Lectures will also detail the use of photographic images in the criminal justice system, including capture, continuity, storage, development and presentation in court. Furthermore, recent advances in imaging of crime scenes, crime scene reconstruction and 3D and graphical representation in court will be covered during lectures.

Year 2: Physical Criminalistics

The examination of most physical forensic evidence requires a broad, but not necessarily deep, knowledge of the characteristics of a wide range of materials. A forensic scientist has no way of predicting what evidential types will be available and/or significant when an investigation begins, so all criminalists require a basic knowledge of the main evidence types. This module looks at the physical (as opposed to chemical or biological) properties of the most common types of evidence encountered, and also encourages you to learn the professionalism needed to seek more highly qualified or expert advice when necessary, "if in doubt then do no harm". You will focus on evidence, though some new methodologies like the scanning electron microscope and x-ray diffraction will be introduced, and will cover the basic principles of a forensic examination, the physical properties of documents, glass fragments (including fracture patterns and optical properties), paint, tool, tyre and footwear marks, soil and vegetation, and finger marks as well as other body prints. The importance of context, physical fit comparisons and, above all, accurate description is emphasised here

Year 2: Personal and Professional Development – Level 4

At Anglia Ruskin University we strive to ensure that students receive an outstanding academic education and student experience and understand that, whilst embedding employability skills within the credit-bearing curriculum is important, it is only part of the set of achievements needed in order to obtain career employment.

This 0-credit module will be used to track and verify the progress students have made with respect to key employability skills and endeavour. Students will work closely with their personal tutor, SU Volunteering Service, Study Skills Plus, and the Faculty Employability Advisor to engage with co-curricular and extracurricular opportunities and activities to enhance their personal attributes.

Year 3: Project Preparation

The main purpose of this module is to prepare students to carry out a project in their final year. The precise content of the module will depend upon the project itself, but common features are likely to be: the selection of a suitable project, usually with advice from the potential supervisor; instruction on how to use relevant sources of published information; carrying out a literature survey on the subject of the planned project; and the writing of a literature review and project plan. Where appropriate, students will gain instruction in hazard assessment. The module will be chiefly student-managed. The time will be spent in planning the project by reference to the literature. Each student will be allotted a supervisor, who will meet with the student on a regular and scheduled basis to advise and review progress. Students will also gain experience of projects by having the opportunity to listen to the project presentations by final year students.

Year 3: Police and Forensic Investigations

This module will explore the many different roles found within the modern Police Service – such as Dog Handlers, Crime Investigators, Firearms Officers, Search Officers, and Police Support Units – in addition to General Response and Community Officers, and how these may be deployed within a Police investigation. The number of Scientific Support Departments within the Police Service will also be discussed, such as Crime Scene Examiners, Fingerprint Laboratories, Fingerprint Bureaux, and external Forensic providers.

This module also aims to provide students with the skills necessary to organise and manage a criminal investigation. Students will be provided with the basic outline of a criminal case from which they will proceed to carry out their own investigation. The investigation will not only involve decisions being made over which forensic samples should be analysed, but also which intelligence links should be followed and how many witnesses should be interviewed and statements taken.

Year 3: Introduction to Fire Investigation

This module will explore different elements of fire scenes, including fire behaviour and fire scene examination. It will cover the fundamental theories of such scenes, and practical approaches to their examination. Students will develop an understanding of fire behaviour, fire science and scene reconstruction. Students will also experience methodologies used in fire scene examination.

Additionally, fire scene safety for fire investigators will be explored in order to ensure students' understanding of health and safety considerations at fire scenes. The preservation of scenes and evidence is key to any investigation, especially so for fire scenes. This module will explore preservation procedures applied by fire scene investigators in depth.

The collection of evidence in fire scenes (and subsequent analysis of such evidence) can help identify an offender, and is therefore of utmost importance. The collection of such evidence, and its documentation within fire scenes, will be explored in order to develop students' understanding of the correct procedures by following nationally-recognised standards.

Throughout the module, students will be able to develop their skills in the interpretation of the cause, origin and spread of fires.

Year 3: Personal and Professional Development – Level 5

At Anglia Ruskin University we strive to ensure that students receive an outstanding academic education and student experience and understand that, whilst embedding employability skills within the credit-bearing curriculum is important, it is only part of the set of achievements needed in order to obtain career employment.

This 0-credit module will be used to track and verify the progress students have made with respect to key employability skills and endeavour. Students will work closely with their personal tutor, SU Volunteering Service, Study Skills Plus, and the Faculty Employability Advisor to engage with co-curricular and extracurricular opportunities and activities to enhance their personal

attributes.

Year 3: Scene and Laboratory Investigation

Scene and Laboratory Investigation builds on the knowledge gained at Level 4 relating to evidence recovery and packaging. The module provides the student with the opportunity to undertake practical work in the recovery of evidence at various scenes and highlights the problems that different types of scenes can bring. The module will build on the knowledge already gained in relation to contamination issues and also issues in the chain of continuity of evidence. Students will receive a practical introduction in the use of different laboratory techniques, which they can use to examine and analyse evidence recovered from crime scenes, such as fingermark development (using physical and chemical development). This module will particularly focus on the correct recording of crime scenes through photography, sketching, and contemporaneous note taking.

Year 3: Mass Fatality Incidents

This module will introduce students to the variety of mass fatality incidents that occur, both within the UK and Internationally. The module will cover natural disasters, accidents and intentional incidents such as terrorist attacks.

Over recent years, large-scale natural incidents such as the Asian Tsunami, increased terrorist incidents such as those seen in London and Manchester, and accidents such as aviation incidents have led to standardised responses by Incident Management teams across the world.

In addition to considering the planning and management systems in place for dealing with potential incidents, the module will also consider response actions. These will include: casualty bureau and information gathering in the immediate aftermath of an incident; and the relevant management and investigative roles, such as the Senior Investigating Officer and Senior Identification Manager in the UK. There will be a particular focus on Disaster Victim Identification (DVI) and the methodologies and standards used formally to identify victims of mass fatality incidents.

The roles and responses of personnel at all stages of planning for and responding to an incident will be examined and various aspects of the investigation and DVI processes will be examined including the roles of those at the scene, family liaison officers, mortuary teams and the identification commission.

Students will be able to use universally-accepted Interpol documentation in order to complete ante mortem and post mortem information and assess how this is used in the identification process. Learning will also include the recording, recovery and repatriation of personal effects.

Year 3: Evidence-Based Policing

This module provides students with the knowledge and understanding of the key principles of Evidence-Based Policing, a methodology being employed increasingly across the country to tackle crime in times of austerity and greater demand for transparency and accountability.

The module will be taught in a lecture/seminar format.

Content will include review of the twentieth-century policing style, how research is being increasingly employed to aid policy decisions in the twenty-first century, analyses of the police response to common problems in society, how current methodologies can be improved with the use of research, and the scope for evidence-based policing moving into the future.

Year 3: Digital Forensics

This module will introduce students to the field of digital forensics and cybercrime, a critical component in the majority of modern policing incidents and/or investigations.

Students will be introduced to the key aspects of the digital investigative strategy, including identification, the powers necessary for lawful seizure, safe handling, policy and legislation, and methods of examination of digital evidence.

Students will also explore how digital evidence is reported within the criminal justice system and consider the transnational implications for this crime type.

Material will initially be delivered in lecture/practical format to secure the knowledge-base, and then students will perform case

study analyses to support and develop the learning process.

Students will be able to incorporate and contextualise the learning from this module into key level 6 modules demanding advanced crime scene investigation skills.

Year 4: Undergraduate Major Project

The individual Final Project module allows students to engage in a substantial piece of individual research and / or product development work, focused on a topic relevant to their specific discipline. The topic may be drawn from a variety of sources including: Anglia Ruskin research groups, previous / current work experience, the company in which they are currently employed, an Anglia Ruskin lecturer suggested topic or a professional subject of their specific interest (if suitable supervision is available). The project topic will be assessed for suitability to ensure sufficient academic challenge and satisfactory supervision by an academic member of staff. The chosen topic will require the student to identify / formulate problems and issues, conduct literature reviews, evaluate information, investigate and adopt suitable development methodolgies, determine solutions, develop hardware, software and/or media artefacts as appropriate, process data, critically appraise and present their finding using a variety of media. Regular meetings with the project supervisor should take place, so that the project is closely monitored and steered in the right direction.

Year 4: Crime Scene Analysis

This module aims to provide students with the theoretical and practical skills necessary to examine crime scenes, recover evidence and analyse findings. Students will be introduced to the most up-to-date methodologies in examining, recording and recovering evidence from crime scenes, including the packing of evidence, ensuring continuity and integrity. Practical evidential recovery skills will be covered in depth, and analysis will be made regarding how such evidence is utilised within the criminal justice system from crime scene to court. Learning will be delivered theoretically through lectures, and practically, through evidence recovery sessions and mock crime scenes.

Underpinning the learning throughout this module will be the concept of best practice, both in terms of evidence recovery and also scene approach and recording. Current methodologies utilised by forensic practitioners will be taught and practically employed by students during their practical sessions.

Advanced crime scene practices will be developed. Students will consider the vulnerability and value of forensic evidence at the crime scenes. This knowledge will enhance the methodical and logical scene approaches required by crime scene investigators. This concept of ‘value’ of forensic evidence will be further explored in the context of forensic evidence submission. This advanced knowledge will also be explored in the context of how crime series are linked, both forensically and through intelligence. This learning will be contextualised through consideration of linking crimes in both volume and serious crime scenes. With major crimes, students will develop understanding of how associated scenes are linked to main scenes. Students will be expected to utilise their knowledge of scene preservation and issues regarding the contamination of evidence.

Students will be introduced to documents used by practitioners including forensic submission forms and witness statement forms. Witness statement completion will be taught in addition to courtroom skills.

Year 4: Specialised Topics in Investigative Science

This module explores and covers specialised and contemporary areas of crime investigation which students may be not have experienced or be aware of when compared to the more commonly reported media crimes. The subject area will cover specific areas of current and emerging crimes within the large and complex range of criminalities, including UK based and international crimes. Each specialist area will cover the history, investigative techniques used, forensic science techniques, investigative agencies involved, legislation, impact of and response the crime.

Year 4: Forensic Pathology

Forensic Pathology is a discipline of pathology concerned with the investigation of deaths where there are medico-legal implications, for example, suspected homicide and other complex medico-legal cases. Forensic pathologists are medically qualified doctors who perform autopsies on sudden, unexpected and suspicious deaths. The forensic investigation of death is a multi-disciplinary approach that involves collaboration between pathologists, crime scene investigators, forensic scientists and other experts in the forensic field. This module develops the knowledge of the students in relation to the subject of forensic pathology, which contributes to the investigation of suspicious death and identification of the deceased. The module covers the

role of forensic pathology in fulfilling the key functions of the medico-legal autopsy determination of cause of death, post-mortem changes after death, estimate of time since death, traumatic causes of death and asphyxias. Various case studies and peer-reviewed articles relating to the subject area will also be discussed in the lecture/seminar sessions.

Year 4: Major Investigations

Major Investigations within the police service are the most complicated investigations, involving not only police personnel but also staff from many other agencies involved in the investigation of crime. This module will look at the national standards involved in major investigations, as well as the different disciplines, including investigative theory, intelligence, planning and investigative strategies. The module will look in depth at various roles within the major investigation team, including senior investigating officers, exhibits officers, intelligence analysts, and scientific support, in addition to general detective roles. The importance of such roles and how these interact with the strategic plan of the investigation management team will be explored in depth. The practical aspects of major investigations will also be explored in depth, highlighting many of the challenges faced by police regarding both personnel and resource management.

Year 4: Forensic Anthropology

This module develops the student's knowledge with regard to the role of the forensic anthropologist and the application of forensic anthropology to criminal investigations.

The module covers search, recovery and identification of human remains, considering the role of the anthropologist both at the crime scene and the mortuary. The module teaches how the anthropologist works with other experts within the investigative framework and covers both domestic and international applications - from single fatality investigations through to the use of anthropology during mass fatality incidents.

Methods of archaeology and osteology and their application to forensic contexts will be taught with the emphasis on basic principles and the critical application of techniques and their selection.

A variety of resources will be available, including ARU's collection of human remains and anthropological teaching aids. Case studies and peer reviewed articles will be discussed and a variety of additional resources are available through the digital library.