



Applied Dual-Use Biosecurity Education

Master's-level 20-credit Module

A large, stylized graphic of a DNA double helix structure, rendered in various shades of blue and white, set against a light blue background with circular patterns.

**Online
Learning**

Applied Dual-Use Biosecurity Education

The University of Bradford is home to the world's largest university centre for the study of peace and conflict. The Division of Peace Studies has a staff and student body of more than 400 people and has a world-class reputation for peace research. The centre is also one of the UK's leading politics departments.



Introduction

The Division of Peace Studies has just introduced an exciting new online module: Applied Dual-Use Biosecurity Education. It has been established in recognition of the potential that exists for producing research in life sciences for peaceful purposes that are well-intended for public benefit but which could be misused and directed for purposes such as biowarfare and bioterrorism. This has given rise to what is now widely known as the “dual-use dilemma” and the growing debate about the dual-use nature of life sciences research with implications for biological weapons making.

Historically, this dual-use potential has been underappreciated by the life sciences and wider communities. However, recent terrorism events have heightened awareness and concern for this issue. Subsequently, there have been a range of international calls to promote education and awareness-raising among life scientists on the dual-use aspects of scientists research, and consequently among peace and conflict resolution specialists.

Why study Applied Dual-Use Biosecurity Education?

The need to address the security implications of scientific research through education about dual-use has gathered momentum in the twenty-first century. Notably, this area has witnessed the following developments:

- **Publication of Scientific Research Findings:** In 2003 scientific journal editors issued a joint statement on the importance of biodefence and biosecurity considerations. [Nature 421: 771 (20 February 2003).]
- **Policy for Science in US Higher Education:** The need for mandatory biosecurity education for all federally funded US education institutions has been stated by the NSABB, Strategic Plan for Outreach and Education on Dual-Use Research Issues (DHHS, Bethesda, MD, 2008).

- **Security Policies:** Dual-use education to all life scientists was recommended by the Commission on the Prevention of WMD Proliferation and Terrorism, World at Risk in 2008.
- **Funders of Scientific Research:** In the UK scientists are asked by the Medical Research Council and the Wellcome Trust to consider the dual-use implications of their work.
- **States Parties to the Biological and Toxin Weapons Convention (BTWC):** With regard to the possible misuse of biological science research, in 2008 States Parties noted that, “formal requirements for seminars, modules or courses, including possible mandatory components, in relevant scientific and engineering training programmes and continuing professional education could assist in raising awareness and in implementing the Convention”.

What does the course seek to achieve?

This is a train-the-trainer course targeted at improving biosecurity and dual-use awareness and education. The course aims to:

- Introduce participants to the concept of ‘bioethics’, in so far as it relates to the broader issue of biosecurity;
- Develop awareness and understanding of a range of dual-use ethical dilemmas that arise due to the impact of science and technology on society;
- Develop knowledge of ethical approaches which provide a defence for ethical decisions or recommendations regarding dual-use technologies; and
- Facilitate further bioethical research into ‘dual-use’ issues and develop policies and practices that will prevent the misuse of knowledge generated through biomedical research.

You will be encouraged to bring your own personal ideas and experiences to the course, sharing these with peers in order to contextualise their knowledge and understanding in ways that will help them meet the ethical challenges thrown up by dual-use.

What will I study?

Working in a fully supported online learning community, you will be able to communicate and interact with peers, developing your practice through sustained reflection and participation in a range of activities and scenarios. The course will include topics such as:

- The Dual-Use Dilemma and the Responsibility of Scientists;
- Biowar, Bioterror and the International Prohibition Regime;
- National Implementation of the BTWC;
- The history of ethics and philosophy, ethics theory and methods, and the use of ethics in resolving dilemmas;
- The Web of Prevention; and
- Relevant expert-level scenarios that address a broad range of biosecurity issues of concern including: publishing, funding, export controls and whistle blowing.

Why study online?

By studying online you get to:

- Gain 20 UK Higher Education Master's level credits without leaving your own workplace / home,
- Demonstrate your ability to study at Master's-level,
- Fulfil requirements to undertake Master's-level Continuing Professional Development,
- Avoid difficulties of travelling and living abroad, and complicated visa arrangements, and
- Reduce your carbon footprint.

Who should apply?

- People who need the flexibility that online learning provides
- Life scientists
- Training providers

- Peace and conflict practitioners

- Those involved in the Pharmaceutical and Bioethnology industry
- Emergency planners, First Responders, policy-makers and military professionals
- Staff involved in Continuing Professional Development

How will the course be delivered?

You will participate in lectures, seminars, and discussion groups which all take place online. These will be delivered from Bradford to locations around the world where you will interact face-to-face with the module leader in an online virtual learning environment (VLE).

You will undertake an individual module (4,000-word) assignment as well as interacting with each other in an online VLE to undertake a (2,000-word) group-work assignment.



Entrance Requirements

- A first degree, usually Upper Second Class (2:1) Honours or equivalent in a relevant subject
- 6.5 IELTS or equivalent
- No previous knowledge of bioethics is required

This is fully moderated and accredited by the University of Bradford with successful candidates being awarded 20 UK Higher Education Master's-level credits on completion of the module.

Essential Requirements

- Access to a reasonably high-specification computer with a broadband internet connection. An ISDN connection is preferable. (Those with dial-up connections may experience difficulty engaging with module resources such as video and audio transmissions.)
- Webcam
- Headphone with microphone
- Competency in using computers

When does it start?

This is a 12-week course starting September and January annually.

How much will it cost?

EU/UK and International Students:
£1,140- STERLING (2010 / 2011)

How do I find out more?

Contact the principal co-ordinator:

Dr Simon Whitby

Email: s.whitby@bradford.ac.uk

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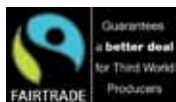
Web: www.brad.ac.uk/peace/courses/PostgraduateCourses/AppliedDual-UseBiosecurityEducation/

Why Bradford?

- The Division of Peace Studies at the University of Bradford has a global reputation with the media, governments and academia for rigorous, academic policy-orientated research.
- Academics regularly advise governments, international organisations and non-governmental organisations around the world.
- **Professor Malcolm Dando** is an internationally recognised expert in the field of International Security. His expertise is in chemical and biological weapons, arms control, and biosecurity; including how the ongoing revolution in the life sciences might open up possibilities for new forms of biological weapons.

- **Dr Simon Whitby**, Head of the Bradford Disarmament Research Centre and RCUK Fellow, has an established research reputation in the area of offensive anti-crop biological warfare programmes and also administers "The Biological and Toxin Weapons Convention" website funded by the Canadian Government.

* *The course is supported by the University of Bradford's Virtual Learning Environment where course material is located and distributed, and assignments are submitted. Related online networking e-platforms are utilised for communication with the course moderators and for communication amongst participants who will be required to conduct online group work. The University of Bradford takes no responsibility for unforeseen network and/or computer disruption, interruptions or failure. Local computer hardware and software and network problems and failures are entirely the responsibility of course participants.*



We can arrange for this material to be transcribed into an accessible format such as Braille, large print, E-text (compatible with screen-reading software) or digital audio such as CD. Please contact the Department of Peace Studies. Tel: 01274 234187

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Detailed maps of the University campus are available on our website at: www.bradford.ac.uk/maps

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