UNIVERSITY OF CAMBRIDGE

Programme Specification 2021-22

Postgraduate Certificate in Practical Science Communication

1	**Awarding body**	University of Cambridge
2	**Teaching institution**	University of Cambridge, Institute of Continuing Education
3	**Accreditation details**	None
4	**Name of final award**	Postgraduate Certificate
5	**Programme title**	Practical Science Communication*
6	**UCAS code**	N/A
7	**JACS code(s)**	P9
8	**Relevant QAA benchmark statement(s)**	None
9	**Qualifications framework level**	FHEQ Level 7, PGT
10	**Date specification produced**	September 2023

* Cognate Faculty endorsement - Faculty of Biology

The Postgraduate Certificate in Practical Science Communication is part of the Institute of Continuing Education's award-bearing programme at FHEQ level 7, offered to part-time adult students.

ICE is a General Board, non-School institution whose purpose can be defined in two complementary ways. It is a conduit both for transmission of the University's knowledge and research on the one hand and for enabling members of the public to access higher education courses, whether for personal interest or professional development, on the other. In these ways it contributes significantly to the University's public engagement and widening participation commitments.

Introduction

The importance of Science Communication is undeniable. Science and its related disciplines have a wide-ranging and profound impact upon the lives of individuals and scientists have a responsibility to communicate their work in a responsible, effective and engaging manner within the wider community[1,2]. The need for scientists to effectively communicate with the wider public has been recognised for a number of years by major funding bodies and Societies. The growing importance of effective and relevant science communication has been formally recognised by the House of Commons Science and Technology Committee in their recent "Science Communication and Engagement" report[3].

[1] https://acmedsci.ac.uk/file-download/41515-573306bdc8865.pdf
[2] Ipsos MORI (2014) Public attitudes to science 2014, main report
[3] https://publications.parliament.uk/pa/cm201617/cmselect/cmsctech/162/162.pdf

Science Communicators need to adopt engaging, high quality and accessible methods that spark interest, maximise impact, and reach as wide an audience as possible[4]. This requires appreciation of the theories of effective communication and engagement, the use of innovative and practical approaches, an understanding of the needs of the audience, and an awareness of the broader ethical and societal implications of the science. High quality training in science communication will provide these skills and expertise and fits with the underlying principles of the Concordat for Engaging the Public with Research[5].

Educational aims

The programme aims to develop individual science communicators able to adopt an informed, adaptive, discipline relevant and critically reflective approach to the practical delivery of science communication.

The course will:

- Provide professionally relevant teaching and learning in the theory, knowledge and skills that underpin, and are at the forefront of, science communication and engagement.
- Develop and create skilled science communicators with the necessary expertise and understanding to engage in and deliver well-informed high-quality science communication activities appropriate to the needs of their discipline and their audience.
- Promote a comprehensive understanding of the practical and ethical considerations relevant to science communication.
- Provide students with the theoretical knowledge and the practical opportunity to apply their learning in a work-relevant and practical manner through the design, delivery and evaluation of a specific science communication or engagement activity.

Learning outcomes

The over-arching learning outcomes for the programme are:

<u>Knowledge and understanding</u>

- To enhance the students' systematic knowledge and critical understanding of the importance, relevance and breadth of science communication in the modern world.
- To increase student understanding of the academic and theoretical knowledge that underpins effective communication and engagement, including fundamental issues and current debates in communication theory, sociology, politics, ethics, psychology and history of science.
- To develop students' ability to critically evaluate subject matter to identify what is worth, and what should be, reported.
- To enable students to describe and critique key practical techniques and approaches used for science communication.
- To create an enquiring perspective to enable critical and evaluative discussion that extends student understanding of key ethical and moral issues in the communication of science.
- To develop an appropriate understanding of the available methods for communicating with and engaging new audiences with diverse professional, specialist and non-specialist backgrounds and to understand how and when to apply these methods.

[4] https://wellcome.ac.uk/sites/default/files/science-communication-inquiry.pdf
[5] http://www.rcuk.ac.uk/Publications/policy/perConcordat/

- To provide a conceptual understanding of the requirements and importance of science communication in terms of the Impact agenda in Higher Education.

Skills and other attributes

- To design, implement and evaluate a science communication activity from start to finish.
- To gain discipline-specific skills for the delivery of a wide-range of science communication approaches.

Programme structure

The Postgraduate Certificate (PgCert) is a one-year part-time programme resulting in 60 FHEQ (Framework for Higher Education Qualifications) level 7 credits and a University of Cambridge award. There are three taught units structured as follows:

Unit 1: The fundamentals of practical science communication

Aim: To provide students with a theoretical, academic and practical underpinning of the knowledge and understanding required to be an effective and engaging communicator. To instil the ethical and critical awareness relevant to identify the importance, the relevance, and the caveats of science communication from a professional perspective.

Indicative content:

- Developing an understanding of what science communication is and why it is important; connections with the Impact agenda in Higher Education; the relationship between science and the media.
- The psychology and theory of effective engagement and communication
- Identifying, understanding and engaging your audience; the use of storytelling and narrative; key skills for science communication.
- Critical evaluation of science - determining what should be communicated, what is worth communicating and the ethical elements of science communication.
- Critical analysis of science communication case studies.
- Effective evaluation of the design, delivery and success of science communication.

Assessment: Summative assessment of a critical analysis of a range of science communication case studies accompanied by a piece of personal reflection (~3,000 words). Formative assessment of up to 4 short science communication pieces that contribute to an end of course portfolio.

Unit 2: The art of practical science communication

Aim: To enable students to make value-based judgements combining discipline specific factors, academic theory, and practical considerations, to ensure they are equipped to choose and deliver the most appropriate form of science communication.

Indicative content:

- Practical skills training, underpinned by an academic basis, in the major techniques and approaches employed in science communication, such as: journalism, article writing, blogs & online writing, social media platforms, videos and vlogs, broadcasting, public events, and museums.

Assessment: Summative assessment of an evaluation of a specific science communication technique consisting of a written critique (~1,500 words) along with the production and delivery of a visual presentation such as a video, poster or talk. Formative assessment of up to 4 short science communication pieces that contribute to an end of course portfolio.

Unit 3: Designing and delivering practical science communication

Aim: To enable students to apply and develop their learning from Units 1 and 2 through the design, production, delivery and evaluation of a high-quality and discipline appropriate science communication activity.

Indicative content:

- Online and Tutor-based support for activity design, implementation, and evaluation.
- Delivery of science communication activity of the student's choice.
- Reflective evaluation of the design and delivery of the science communication activity.

Assessment:

Summative assessment of a logbook style portfolio of the pitch, production, delivery and evaluation of an actual science communication event accompanied by a reflective piece on the process and experience. Formative assessment of up to 4 short science communication pieces that will contribute to an end of course portfolio.

Teaching methods

The programme is delivered through a combination of in-person teaching sessions and asynchronous approaches provided via the course virtual learning environment. Examples of the type of teaching methods use include, but are not limited to, live and pre-recorded lectures, seminars, group discussions, online readings, quizzes, data handling exercises, group activities and discussion forums. Peer-to-peer learning forms an important element of course teaching.

Online resources, provided through a Virtual Learning Environment (VLE), focus on specific science communication topics, case studies and the exploration of relevant and appropriate additional resources and enable use of 'flipped learning' methodology. Understanding of academic theory and practical application is facilitated through peer-based and tutor-led discussion and critical appraisal.

Assessment methods

The course is assessed through a mix of written (Units 1 and 2), reflective (Units 1 and 3) and practical based (Units 2 and 3) assignments. Assessment of practical components involves face to face delivery (Unit 2) and the production of a logbook style portfolio (Unit 3). All units include formative assessment of short science communication pieces that form part of a final portfolio submitted for summative assessment at the end of the course.

The students receive continual formative feedback throughout the course using a variety of strategies and techniques including evidence of regular reflection.

Entry and/or progression requirements

1. Applicants are normally expected to a hold a 2i degree or higher from a UK university or an equivalent from an overseas university in a STEM (science, technology, engineering, mathematics) or medical subject.

2. Applicants to the programme are expected to demonstrate proficiency in the English language; students whose first language is not English must be able to satisfy the current English Language Competence requirements of the University's Board of Graduate Studies in the year in which they apply for admission to the course.

3. The structure of the programme allows international students to attend on Student Visitor Visas, and those in full-time employment, whether in the UK or abroad, to work and study at the same time.

Management of teaching quality and standards

The University ensures high standards of teaching and learning in the following ways:

- The completion of Annual Quality Updates by each Faculty and Department, to enable central overview of provision and assist in dissemination of good practice.
- Scrutiny of the reports of External Examiners for all teaching programmes.
- Encouraging student engagement at both the local level, through involvement in Faculty and Departmental Committees, and at a central level by participation in the National Student Survey (NSS), the Postgraduate Teaching Experience Survey (PTES) and the Postgraduate Research Experience Survey (PRES).
- Holding reflective, centrally-coordinated, Learning and Teaching Reviews for all teaching institutions every six years to explore provision and suggest constructive courses of action.
- Mentoring, appraisal, and peer review of staff, and encouraging staff participation in personal development programmes.

Graduate employability and career destinations

The majority of students are in full-time or part-time employment in a STEM or medicine related discipline. This could for example be either academic or industrial research, or a science-related communications role. Students take this course for reasons of professional and career development, advancement, personal development, or to enhance their skills and knowledge. Some students are recent graduates looking to become professionals working in science communication or similar and related disciplines.

will endeavour to update the programme specification accordingly, and prior to the start of the next academical year.

Further information about specifications and an archive of programme specifications for all awards of the University is available online at: www.admin.cam.ac.uk/univ/camdata/archive.html