University of the West of England
BRISTOL

ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data						
Module Title	Science in Public Spaces					
Module Code	USSJYU-30-M		Level	M	Version	1
UWE Credit Rating	30	ECTS Credit Rating	15	WBL module?	*No*	
Owning Faculty	Health and Applies Sciences		Field	Biological and Environmental Sciences and Science Communication		
Department	Biological, Biomedical and Analytical Sciences		Module Type	*Standard*		
Contributes towards	MSc Science Communication PGCert Science Communication					
Pre-requisites	None		Co- requisites	None		
Excluded Combinations	None		Module Entry requirements	None		
First CAP Approval Date	2nd February 2016		Valid from	September 2016		
Revision CAP Approval Date			Revised with effect from			

Review Date	

Part 2: Learning and Teaching	
Learning Outcomes	On successful completion of this module students will be able to: 1. Analyse past and present hands-on science communication activities and events delivered in public venues in terms of their goals, aims and objectives, and relate them to corresponding theories and trends in science communication. (B1) 2. Synthesize theoretical and practical principles of science communication and apply these to evaluate the strengths and weaknesses of science communication approaches aimed at addressing different audience needs. (B1, B2) 3. Identify contemporary innovative approaches to science communication and analyse their challenges and opportunities, integrating insights from different knowledge domains that affect the conceptual and technological evolution of science communication. (B1, B2) 4. Organise knowledge and skills on science communication in order to create, plan and develop an activity and/or exhibit that will appropriately communicate science to a specific public. (A1) **5.** Apply the skills required to work as a professional science communicator in the context of direct contact with the public through 'live' audience engagement and to evaluate this work. (A1, B2)
Syllabus Outline	This module explores cutting edge and alternative approaches to science

	communication in public spaces and in front of live audiences, including Science Centres and Planetariums, the science and art movement and new technologies. Students will explore how new ideas can be used creatively as vehicles for science communication. The module will also explore issues and strategies for widening the reach of science communication initiatives. Strategies for increasing social inclusion and accessibility will be explored as will issues surrounding the 'marketing' of science communication events to non-traditional audiences. Students will explore extending the reach of science communication activities to ethnic minorities as well as the extent to which science communication can be conducted on an international basis vs tailored to specific cultures. A further aim of this module is to develop students' practical skills in creating and delivering hands-on science communication projects. Such activities involve working with 'live' audiences and encompass a broad range of communication styles, such as exhibitions, demonstration lectures, debates, hands-on workshops, make-and-take activities etc. Topics covered include: • Presentation and demonstration skills • Science centres museums and planetariums, science festivals. • New approaches and venues for science communication • Opportunities associated with the sci-art movement, including science theatre • Exhibit and artefact development • Appreciation of the methodologies available for reaching sub-groups within the population, for example improving accessibility and social inclusion
Contact Hours	Face to face teaching on Science in Public Spaces is delivered in three separate short intense engagements, typically lasting three days. These 3-day blocks comprise a mix of lectures, seminars, workshops and field trips. The standard teaching day on the module is 9.30 – 16.30. Additional directed study/preparation (independent and group) is required in the 'free' time and evenings during block teaching to complete 'twilight' tasks and prepare for taught workshops held later in the block. This is in addition to independent and directed study between teaching blocks. Synchronous or asynchronous group work organised in the student's own time will be required to support assessed work. These collaborations with other students will have specific opportunities for feedback from academic tutors, through submission of assignments for formative feedback. In addition, at least one independent study task will be provided where students can submit work for formative feedback from academic staff. Together these activities comprise approximately 80 hours contact time. Approximately a further 220 hours of independent and directed study time are required for this module. This comprises directed reading or other study provided through the online virtual learning environment, as well as independent work required to complete the design of a public-facing activity and report assessments.
Teaching and Learning Methods	**Scheduled learning** on this module occurs in three block teaching sessions. During the intensive teaching sessions, material will be delivered using a mixture of lecture, seminar and workshop sessions as well as field trips/visits as appropriate to the content being discussed. Additional practical preparation and directed study is required during the intensive teaching block to support learning and participation in class. Scheduled teaching sessions emphasise discussion, exploring the motivations of individuals and organisations that engage in science communication activity and

	analysing examples of both good and bad practice through examination of case studies. **Independent Learning** is required to support the intensive teaching periods. Guided and independent reading will provide a suitable background on the subject and enable students to examine theoretical concepts in detail.
Key Information Sets Information	Key Information Sets (KIS) are produced at programme level for all programmes that this module contributes to, which is a requirement set by HESA/HEFCE. KIS are comparable sets of standardised information about undergraduate courses allowing prospective students to compare and contrast between programmes they are interested in applying for. **Key Information Set - Module data** *Number of credits for this module*: 30 Hours to be allocated: 300 Scheduled learning and teaching study hours: 80 Independent study hours: 220 Placement study hours: 0 Allocated Hours: 300 The table below indicates as a percentage the total assessment of the module which constitutes a - **Written Exam**: Unseen written exam, open book written exam, In-class test **Coursework**: Written assignment or essay, report, dissertation, portfolio, project **Practical Exam**: Oral Assessment and/or presentation, practical skills assessment, practical exam Please note that this is the total of various types of assessment and will not necessarily reflect the component and module weightings in the Assessment section of this module description: Total assessment of the module: Written exam assessment percentage: 0% Coursework assessment percentage: 50% Practical exam assessment percentage: 50% 100%
Reading Strategy	All students will be encouraged to make full use of the print and electronic resources available to them through membership of the University. These include a range of electronic journals and a wide variety of resources available through web sites and information gateways. The University Library's web pages provide access to subject relevant resources and services, and to the library catalogue. Many resources can be accessed remotely. Students will be presented with opportunities within the curriculum to develop their independent information retrieval and evaluation skills in order to identify such resources effectively. Students will receive specified reading to prepare for each block. In most cases, access will be provided via the module virtual learning environment or the UWE library. Students will be given regular handouts and other materials in class, and further supporting information (including full reference lists) will be provided.

Indicative Reading List	Bell, P., Lewenstein, B., Shouse, A.W. and Feder, M.A., eds. (2009) Learning science in informal environments: people, places, and pursuits. Washington, D.C.: Committee on Learning Science in Informal Environments, National Research Council. Brake, M. and Weitkamp, E., eds. (2010) Introducing Science Communication. London: Palgrave MacMillan. Diamond, J. (1999) Practical evaluation guide: tools for museums and other informal educational settings. London: AltaMira Press. du Plessis (2008) "Public communication of science in developing countries" in Bucchi, M. and Trench, B. (eds) Handbook of Public Communication of Science and Technology. Oxon, Routledge. Ede, S. ed (2000) Strange and charmed: Science and the contemporary visual arts. London: Calouste Gulbenkian Foundation. Ede, S. (2005) Art and science. London: Tauris. Erickson, M. (2005) Science, Culture and Society. Polity Press. Evered, D. and O'Connor, M. (1987) Communicating Science to the Public. Chichester: Wiley. Holliman, R., Thomas, J., Smidt, S., Scanlon, E. and Whitelegg, E. eds (2009) Practicing Science Communication in the Information Age: Theorising Professional Practices. Oxford: Oxford University Press Holliman, R., Whitelegg, E., Scanlon, E., Smidt, S. and Thomas J. eds (2009) Investigating Science Communication in the Information Age: Implications for Public Engagement and Popular Media. Oxford: Oxford University Press. Humphrey, T. & Gutwill, J.P. (2008) Fostering Active Prolonged Engagement: The Art of Creating APE Exhibits. Exploratorium Museum Professional Series. McLean, K. & McEver, C. (2004) Are we there yet? Conversations about best practices in Science Exhibition Development. The Exploratorium. Olson, R. (2009) Don't Be Such a Scientist. Washington: Island Press. Scanlon, E., Whitelegg, E. and Yates, S. (1999) Communicating Science. London: Routledge. Rank, S. (2008) In the Theatre of Science. VDM Verlag. Trench, B. (2008) "Internet: turning science communication inside-out?" in Bucchi, M. and Trench, B. (eds) Handbook of Public Communication of Science and Technology. Oxon, Routledge. Schiele, B. (2008) "Science museums and science centres" in Bucchi, M. and Trench, B. (eds) Handbook of Public Communication of Science and Technology. Oxon, Routledge. Weaver, S. (2007) Creating great visitor experiences: a guide for museums, parks, zoos, gardens, & libraries. California: Left Coast. Wilkinson, C. and Weitkamp, E. (2016) Creative Research Communication. Manchester: Manchester University Press Xanthoudaki, M. Ed (2002) A place to Discover. Teaching Science and Technology with Museums. Milano: SMEC.

Part 3: Assessment	
Assessment Strategy	**Assessment B1** will ask students to experience and reflect on up to three existing projects or events that they will visit independently between blocks 1 and 2. Students will analyse in a reflective critique the interventions they visited. Applying their learning comprised by learning outcomes 1 – 3, they should reflect on their experiences of engaging with these projects, commenting for example on what it is like for the user of the project to engage with the project as well as critical reflections and analysis, for example on the types of skills needed within the project teams to develop that type of project and the potential types and depths of engagement the project might hope to achieve. In addition, they should include reflection and analysis of specific readings that provide a wider context (e.g. academic research into engaging with specific audiences or in specific environments, evaluations of related project). **Assessment A1:** The module is structured so as to allow students to prepare a hands-on exhibit for a science fair to take place at the end of the last teaching block. Their exhibit should demonstrate the practical application of the skills and theoretical background they will have been presented with during class, according to learning outcomes 4 and 5. The students will have been working on the development on a hands-on exhibit on the scientific topic of their choice from among those offered to them at the beginning of the module, and on the preparation of its presentation at the science fair that will take place on the last day of the 3rd teaching block. However, the exhibit and its presentation will be assessed on the previous day in class. **Assessment B2** is the written report. The written submission should present a guide to good practice for the hands-on science communication of the scientific topic students worked on, based on their experience in developing the hands-on exhibit and presenting it to the public at the science fair, and applying learning outcomes 2, 3 & 5. Guide to good practice This guide should include the following chapters 1. A Summary of no more than one page which provides an overview of the content in the rest of the guide. 2. An Introduction to the science covered and why it is relevant, for example in terms of audience, the wider scientific context, or the organisation conducting the research (UWE in this case). 3. The Aims and Objectives of the exhibit and the presentation 4. A clear Outline of the activity you have developed, detailing and justifying choices in relation to audience and scientific contents, and how they map to the aims and objectives, with reference to science communication theory. 5. A step-by-step guide through the practicalities of the Development of the activity. This guide should serve as a walk-through for future science communicators of any background (i.e. a research scientist as well as a student or a teacher) who would want to prepare the same activity. It should include possible pitfalls and dead-ends found along the way. 6. A Critical analysis of the *strengths and weaknesses* of the chosen approach that may help others in future attempts, particularly in view of the evaluation built into the activity at the science fair, based on an evaluation strategy developed during the design of the activity. Students are reminded that they will be writing at M-level and advised to refer to current science communication theory and practice to back up their arguments.

Identify final assessment component and element	***Component B2***	
% weighting between components A and B (Standard modules only)	**A:** **40%**	**B**: **60%**
First Sit		
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**	
1. Development and Presentation of a hands-on activity (15 minutes)	100%	
Component B **Description of each element**	**Element weighting** **(as % of component)**	
1. Reflective critique on events visited (2000 words)	40%	
2. Written report: good practice guide (3000 words)	60%	

Resit (further attendance at taught classes is not required)	
Component A (controlled conditions) **Description of each element**	**Element weighting** **(as % of component)**
1. Development and Presentation of a hands-on activity	100%
Component B **Description of each element**	**Element weighting** **(as % of component)**
1. Reflective critique on events visited (2000 words)	40%
2. Written report: good practice guide (3000 words)	60%
If a student is permitted a retake of the module under the University Regulations and Procedures, the assessment will be that indicated by the Module Description at the time that retake commences.	