University of the West of England
BRISTOL

CORPORATE AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Basic Data						
Module Title	Hardware Hacking					
Module Code	UPCP68-30-3		Level	3	Version	1
UWE Credit Rating	30	ECTS Credit Rating	15		WBL module?	No
Owning Faculty	ACE		Field		Cultural Industries	
Department	Arts & Cultural Industries		Module Type		Project	
Contributes towards	BA(Hons) Creative Media Design					
Pre-requisites	None		Co- requisites		None	
Excluded Combinations	None		Module Entry requirements		N/A	
Valid From			Valid to			

CAP Approval Date	

Part 2: Learning and Teaching	
Learning Outcomes	On successful completion of this module students will be able to demonstrate: 1. An understanding of critical concepts and debates around coded material space 2. An ability to understand and critically appraise the use of code in objects and environments 3. An ability to translate theoretical concepts into a practical and realisable project 4. An exploratory, experimental and artistic approach to media production. 5. An ability to work individually and manage time and production schedules 6. An ability to assist and partner in the conception of a proposal and development of a project 7. Conceive of a user and user experience through prototyping and iterative development. 8. An ability to use data input and appropriate programming interactively
Syllabus Outline	The object of this module is to investigate the notion of hardware hacking as the penetration, exploration or investigation of a physical object and computer system with the goal of understanding it and creatively intervening into it, not of destroying it. This module situates hardware hacking within the debates about the internet of things and the interrelationship between code / media and the material

	world. It investigates the extent to which data driven machinery has been fluidly integrated into everyday life and into a ubiquitous internet of things.

Of central interest here is the nature of coded spaces i.e. everyday life spaces that are penetrated by and that utilise information technologies to facilitate their function. In so doing, the module will explore the various binary oppositions which are put into play in coded spaces, between e.g. material / non-material, input / output, human / non-human and digital / physical. Exploration will be on both theoretical and practical levels. In terms of the latter, students will undertake workshops in the use of Arduino and RFID sensors. Alongside this, students will also be introduced to the basics of Processing programming which they will be expected to have a basic knowledge of. |
| Contact Hours | The contact hours for a student on this module will be 72 hours of scheduled learning. 70 hours of this will be group contact, including theoretical and practical workshops, field visits and talks. The remaining 2 hours will be for individual tutorials, either in person or synchronous online. The student will be expected to conduct 228 hours of independent learning. |
| Teaching and Learning Methods | The module is taught through **scheduled learning** including seminars, tutorials, project supervision, practical classes and workshops; supervised time in studio/workshop.

Students are expected to pursue **independent learning**, including 228 hours engaged with essential reading, case study preparation, assignment preparation and completion etc. These sessions constitute an average time per level as indicated in the table below. Scheduled sessions may vary slightly depending on the module choices you make. |
| 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	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours	
300	72	228	0	300	0

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			100%
Practical exam assessment percentage			0%
			100%

Reading Strategy	All students will be encouraged to make full use of the print and electronic resources available to them and through systems such as UWE online. All essential reading will be accessible through online sources and will be indicated clearly in the module handbook. Instructions on how to access all readings for the course will be available on Blackboard. Further online texts and forums for debate will be clearly identified for research and discussion. Training in the identification and evaluation of online research resources will be provided in taught sessions. Given the cross disciplinary of this module no single suitable text exists would fully support the module content. A prepared reading pack will be available at the start of the module. The currency of information may wane during the lifetime of the specification, consequently current advice on readings will be available through more frequently updated mechanisms such as the handbook and intranet, and these will be revised annually. Some relevant materials will be made available in reading packs or on Blackboard where applicable, within the limits of what is permissible under the terms of the university's Copyright Licensing Agency license.
Indicative Reading List	**Core reading** Bruns, Axel. (2008) *The Future Is User-Led: The Path Towards Widespread Produsage*. The Fibreculture Journal 11 Web. 5 Mar. 2015. Hartmann, B., S. Doorley, and S.R. Klemmer. *Hacking, Mashing, Gluing: Understanding Opportunistic Design*. IEEE Pervasive Comput. 7.3 (2008): 46-54. Web. 5 Mar. 2015. Kitchin, R., & Dodge, M. (2011). *Code/space: Software and everyday life*. Mit Press. Kittler, Friedrich A, and John Johnston. *Literature, Media, Information Systems*. Amsterdam: GB Arts International, 1997. Print. Kopetz, Hermann. *Internet Of Things*. Real-Time Systems (2011): 307-323. Web. 5 Mar. 2015. Wark, M. (2004). *A Hacker Manifesto*. Harvard University Press

Part 3: Assessment

Assessment Strategy	Students will produce an individual project by working in small groups of two or three and using group partners to develop and assist each other at both project proposal and development stages. Students develop a brief from one of the topics discussed in the seminars – indicative themes might explore for example, activist strategies that attempt to interrupt and re-orientate existing hardware, spatial practices or material objects. Students will be expected to take a creative and experimental approach to their project. The final project is expected to demonstrate some interrelationship between the material world and computational systems.

Students will be expected to utilise a workflow and development process that includes prototypes and iterative development. This will be supported by a development log.

Criteria	Relates to learning outcomes	Source of evidence
1. research Engagement with relevant theoretical and design resources, engagement with debates around coded spaces and objects, initiative in finding appropriate resources	1, 2, 3, 4	A1, A2
2. method engagement with individual and assisted production and research processes, management of time and resources, reflection on research and production processes and outcomes	3, 5, 6, 7	A1, A2
3. technical realisation technical competence and control in a range of hardware and software,	3, 5, 7, 8	A1, A2
4. creative realisation innovation in form and content, application of critical ideas through production, creative judgement, programming and execution	2, 3, 4	A1, A2

Identify final assessment component and element		
	A:	**B:**
% weighting between components A and B (Standard modules only)	**100%**	

First Sit

Component A (controlled conditions) **Description of each element**	**Element weighting**
1. Project and research log	100%

Resit (further attendance at taught classes is not required)

Component A (controlled conditions) **Description of each element**	**Element weighting**
2. Project and research log	100%

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.	