University of the
West of England
BRISTOL

MODULE SPECIFICATION

Part 1: Information			
Module Title	Hardware Hacking		
Module Code	UPCP68-30-3	Level	3
For implementation from	September 2017		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	ACE	Field	Cultural Industries
Department	Department of Arts & Cultural Industries		
Contributes towards	BA(Hons) Creative Media Design		
Module type:	Project		
Pre-requisites	Pervasive Media 2, Data Worlds		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	N/A		

Part 2: Description
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. 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.

Part 3: Assessment

Students will produce an individual project by working in small groups of two or three to develop and assist each other (production assisting) 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.

Identify final timetabled piece of assessment (component and element)	Component A2	
	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. Individual prototypes, production assisting and development log	40%
2. Individual Project, production assisting and development log	60%
Resit (further attendance at taught classes is not required)	
Component A (controlled conditions) **Description of each element**	**Element weighting**
1. Prototypes and Individual Project and development log	100%

Part 4: Teaching and Learning Methods

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 (A1, A2)
	2. An ability to understand and critically appraise the use of code in objects and environments (A1, A2)
	3. An ability to translate theoretical concepts into a practical and realisable project (A1, A2)
	4. An exploratory, experimental and artistic approach to media production. (A1, A2)
	5. An ability to work individually and manage time and production schedules (A1, A2)
	6. An ability to assist and partner in the conception of a proposal and development of a project (A1, A2)
	7. Conceive of a user and user experience through prototyping and iterative development. (A1, A2)
	8. An ability to use data input and appropriate programming interactively (A1, A2)
	The module is taught through practical workshops and introduces all the required software and hardware, building on coding skills, and interface design acquired in Pervasive media 1 and multimedia authoring skills acquired in Convergent Media. This is supported by a series of seminars that explore key debates and concepts around data and computational culture.

	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 (KIS) Contact Hours Total Assessment	**Key Information Set - Module data** *Number of credits for this module* 30 (see table below) The table below indicates as a percentage the total assessment of the module which constitutes a; **Written Exam**: Unseen or open book written exam **Coursework**: Written assignment or essay, report, dissertation, portfolio, project or in class test **Practical Exam**: Oral Assessment and/or presentation, practical skills assessment, practical exam (i.e. an exam determining mastery of a technique) (see table below)

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

Total assessment of the module:			
Written exam assessment percentage		0%	
Coursework assessment percentage		100%	
Practical exam assessment percentage		0%	
		100%	

Reading List	Kitchin, R., & Dodge, M. (2011). *Code/space: Software and everyday life*. Mit Press.
	Kopetz, Hermann. Internet Of Things. Real-Time Systems (2011): 307-323. Web. 5 Mar. 2015.
	Wark, M. (2004). A Hacker Manifesto. Harvard University Press
	Dunne, A. and Raby, F. (2001) Design noir: The secret life of electronic objects. Basel: August/Birkhauser.
	Dunne, A. (2008) Hertzian tales: Electronic products, aesthetic experience, and critical design. Cambridge, MA: MIT Press.
	Haraway, D.J.J. and Haraway (1990) Simians, cyborgs, and women: The reinvention of nature. New York: Routledge.

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First CAP Approval Date	4 June 2015			
Revision CAP Approval Date *Update this row each time a change goes to CAP*	21 March 2017	Version	2	link to RIA
			3	
			4	