

<b>Module code:</b>	CMT523
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<b>Module Title:</b>	Interactive Music Systems
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<b>Level:</b>	5	<b>Credit Value:</b>	20
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<b>Cost Centre(s):</b>	GACT	<b>JACS3 code:</b>	W372
		<b>HECoS code::</b>	100221

<b>Faculty:</b>	Arts, Science and Technology	<b>Module Leader:</b>	Mike Wright
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Scheduled learning and teaching hours	48 hrs
Guided independent study	152 hrs
Placement	0 hrs
<b>Module duration (total hours)</b>	<b>200 hrs</b>

<b>Programme(s) in which to be offered</b>	Core	Option
BSc (Hons) Music Technology	✓	<input type="checkbox"/>
BSc (Hons) Sound Technology	✓	<input type="checkbox"/>
BSc (Hons) Live Sound	✓	<input type="checkbox"/>

<b>Pre-requisites</b>
None

**Office use only**

Initial approval: August 16

Version no:1

With effect from: 01/09/2019

Date and details of revision: Reapproved by AB 13/03/18 as part of reval for

Version no:2

BSc (Hons) Live Sound

**Module Aims**

To develop concepts of computer developed music. Music structures embedded in systems will be investigated. Control of systems will be investigated and implemented using Arduino control over firmware for hardware solutions.

**Intended Learning Outcomes**

Key skills for employability

- KS1 Written, oral and media communication skills
- KS2 Leadership, team working and networking skills
- KS3 Opportunity, creativity and problem solving skills
- KS4 Information technology skills and digital literacy
- KS5 Information management skills
- KS6 Research skills
- KS7 Intercultural and sustainability skills
- KS8 Career management skills
- KS9 Learning to learn (managing personal and professional development, self-management)
- KS10 Numeracy

At the end of this module, students will be able to

Key Skills

1	Demonstrate detailed knowledge to enable sound manipulation by application of software, such as MAX/MSP/Jitter.	KS10	KS3
		KS4	KS9
2	Creatively design specific software and firmware applications to manipulate media interfaces.	KS10	KS3
		KS4	KS9
3	Evaluate and design suitable techniques to exploit algorithms for the manipulation of media.	KS10	KS3
		KS4	KS9

Transferable/key skills and other attributes

Software design. Electronic interface design

**Derogations**

None

**Assessment:**

Assessment will be based on a range of algorithmic possibilities. Designing media manipulation from various concepts such as:-

Lorentz Sequence  
Earthworm Sequence  
Morse-Thue fractals  
Fibonacci derived composition.

Control of external hardware by use of the Arduino family. Choice of Arduino to be suitable for interface.

Design and implementation of fully notated Arduino patch.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1 - 3	Portfolio	100%		Suite of software firmware applications

**Learning and Teaching Strategies:**

The module will be delivered by a series of interactive classes, supported self-learning exercises and tutorials. Various programming packages will be explored and demonstrated.

**Syllabus outline:**

Context of Computer-based music composition.  
Historic background of computer production technologies.  
Programming software;  
MAX/MSP/Jitter/GEM  
Arduino sketches  
Algorithmic Production  
Walsh synthesis programme

**Bibliography:**

**Essential reading**

Cipriani, A. Giri, M. (2016). Electronic Music and Sound Design. Contemponet.  
Marglois, M. (2012). Arduino Cookbook. O'Reilly Media.  
Monk, S. (2013). Programming Arduino Next Steps. Tab Electronics.  
Journal of the Audio Engineering Society.  
Journal of Organised Sound.

**Other indicative reading**

Roads, C. (2015). Composing Electronic Music: A New Aesthetic. OUP USA  
Roads, C (1996). The Computer Music Tutorial. MIT Press.  
[www.futuremusic.co.uk](http://www.futuremusic.co.uk)