MODULE SPECIFICATION

Module Code:	CMT423

Module Title:	Audio & Visual Science

Level:	4	**Credit Value:**	20

Cost Centre(s):	GACT	JACS3 **code**: HECoS code:	J930 100222

Faculty	Arts, Science and Technology	**Module Leader:**	Mike Wright

Scheduled learning and teaching hours	48 hrs
Guided independent study	152 hrs
Placement	0 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered (not including exit awards)	Core	Option
BSc (Hons) Music Technology	✓	☐
BSc (Hons) Sound Technology	✓	☐
BSc (Hons) Television Production & Technology	✓	☐
BSc (Hons) Professional Sound & Video	✓	☐
BSc (Hons) Live Sound	✓	☐
BA (Hons) Sound Design	✓	☐

Pre-requisites
None

Office use only

Initial approval: August 16 Version no:

With effect from: 01/09/2019

Date and details of revision: Reapproved by AB 13/03/18 as part of reval for BA (Hons) Sound Design and BSc (Hons) Live Sound Version no:2

Module Aims

To introduce core principles of science as required for the Audio Visual Industry, this will prepare students for study at level 4/5/6. Mathematics will be delivered and developed as required throughout the module. To create an understanding of the electrical principles of signal transmission.

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	Understand safety requirements with regards to electricity and current. Safety requirements with respect to audio exposure.	KS3	KS10
		KS4	
2	Apply the range of units and measurements that define professional and semi-professional equipment	KS9	KS10
		KS4	
3	Specify the equipment chain for competent AV installations	KS8	KS6
		KS10	
4	Define the process how light and sound is perceived generally by humans. Deduce suitable resolutions for media consumption.	KS9	

Transferable skills and other attributes

Competent use of scientific measuring equipment.

Derogations
None

Assessment:				
Indicative Assessment Tasks:				
A range of experiments will be demonstrated by engaging the students to explore key theory. Post demonstration there will be a time released multiple choice quiz made available through the VLE interface				
Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration or Word count (or equivalent if appropriate)
1	1 - 4	Multiple Choice Questions	100%	N/A

Learning and Teaching Strategies:
Lectures to deliver core science principles, demonstration and class interaction to explore science laboratories. Tutorial support and use of VLE for dissemination of material.

Syllabus outline:
Science Principles: Revision of audio and light units; logarithmic calculation rules. Units and ratios to be covered, dB, dBspl, dBV,dBv, dBm. Ohms law, derivation of power, acoustic watts, electrical watts, impedence.Underpinning mathematical principles. Human Perception; Visual frame rate, blurring, resolution, audio perception Use of amplifiers, pre-amplifiers, power amplifiers, op-amps. Filters, LP BP HP, notch filters, active and passive filters, simple equalizer circuits.

Indicative Bibliography:
Essential reading
Cuttle, C.(2015). Lighting Design. Routledge http://hyperphysics.phy-astr.gsu.edu/hbase/hframe.html Rumsey, F. (2014). Sound and Recording. Focal Press
Other indicative reading
Millerson, G. (2013). Lighting for TV & Film. Focal Press www.aes.org