

## COURSE CONTENT

<b>Course Code</b>	DM3009
<b>Course Title</b>	Audio-Visual Creative Coding
<b>Pre-requisites</b>	DM2008
<b>No of AUs</b>	3
<b>Contact Hours</b>	39 hours studio contact

### **Course Aims**

This intermediate level course will introduce you to real-time interactive audio-visual performance and environments. You will explore a range of hardware and software systems where audio and video are piloted in real-time by audience, performer and /or operator. Your current basic understanding of programming, which is required for this course, will be extended and developed into expressive creative coding, and applied to the development of an original audio-visual work. This learning informs further studies in experimental practices, interactive media, interaction design, exhibit design and experience design.

### **Intended Learning Outcomes (ILO)**

By the end of the course, you should be able to:

1. Describe different methods and techniques of creative coding.
2. Develop audio-visual performative strategies to communicate with audiences.
3. Apply the concept of creative coding to an original audio-visual work.
4. Present, evaluate and reflect on the effectiveness of an audio-visual performance piece in regard to creative coding.
5. Constructively discuss and critique performance concepts, formats, techniques and media employed by peers in creative coding for audio-visual performance.

### **Course Content**

Contemporary technologies and software programming permeate digital media. Since the 1960's, artists and designers have been developing bespoke real-time systems, controller devices, parameter mapping, media synthesis, generative systems, sound diffusion and light projection. The proliferation of low-cost audio-visual equipment and devices with sensing, networking and computing capabilities, combined with the abundance of accessible software solutions, generate unique possibilities in the creative exploration of audio-visual systems.

The course focuses on the development of a hardware-software system for a designed audio-visual performance using elements such as controllers, real-time software, loudspeakers and projectors. These environments are rooted in 'sensory cinema', interactive computer music and related experimental art forms.

By developing your own project, you will push the boundaries of your imagination to achieve some degree of novelty of expression. You will be exposed to many different ways that artists can perform, juxtapose and manipulate audio-visual media during live events. You will become aware of the strengths and limits of the creative coding.

In this course you will engage in all the phases of developing an original performance, including research, ideation, design, implementation, execution, evaluation, documentation and analytical reflection. You will be exposed to key terminology and processes of creative coding and encouraged to explore these processes to create dynamic and unique interactive digital content.

You will explore audio-visual generative techniques, real-time control, novel performer's instrument design and operator interfaces. An overview of both the historical and contemporary leaders in audio-visual performances will contextualise the significance of creative coding in this field.

**Creative Coding, Audio-Visual, Hardware-Software Systems.**

In this course you will develop computational thinking skills to assemble bespoke solutions that supports the creative vision of audio-visual artworks including integrated development environments (IDE) found in a variety of popular arts-engineering toolkits. You will explore areas such as generative techniques, media synthesis, 3D graphics, visualization, projection mapping, virtual reality, sound spatialization, kinetic lights, kinetic objects, networking, and machine learning. You will receive a basic introduction on how to design a digital object that reacts to analogue and real-world settings through human physicality.

**Class assignments and Projects.**

Classes will include mini-lectures, demonstrations, and activities that may be included in the assessment. You will work individually and in groups combining studio practice, research and analysis to develop skills and knowledge that relate to creating situated interactions using analogue and digital media. Through a process of practical studio exercises and workshops you will explore how code and software development can enable innovative ways of translating concepts into unique visual and auditory form.