



<b>Unit Title</b>	Media Streaming and Cloud (blended)
<b>FHEQ Level</b>	Level 5
<b>Unit Code</b>	CLC20204
<b>Credit Value</b>	15
<b>Unit Type</b>	Subject

Learning Hours (Blended)			
Staff – Student Contact Hours		Independent Study Hours	
Classes	37.5	Independent study	62.5
Supervised access to Ravensbourne resources		Preparation for assessment	25
<b>Total</b>		<b>150</b>	

### Unit Description

Broadcasting using conventional methods e.g. Over-the-air (OTA) and streaming through cloud-based mediums are two key methods of transmitting audio and video content.

Due to recent developments in cloud-based technologies and high band width, it is becoming common practice to use cloud as a medium between producer/transmitter and consumers.

This unit will look at available cloud-based technologies and provide an insight into potential methods for live and off-line streaming solutions.

Students will experiment and evaluate available tools and develop an understanding of how these mediums can be used effectively, their strengths and weaknesses and how 5G and other emerging technologies may play a role in further development of these techniques.

The Five Principles underpin the Mindsets and Skillsets Manifesto and are the foundation upon which all course curriculum frameworks and unit specifications are based. The relevant Principles as stated below have been mapped against the Learning Outcomes relevant to each course unit and at each level (see Programme Specifications for full description of the Five Principles):

1. Cultivate / Where the individual thrives.
2. Collaborate / Where disciplines evolve.
3. Integrate / Where education engages industry.
4. Advocate / Where purpose meets practice.
5. Originate / creativity meets technology.

## Unit Indicative Content

- Introduction to Streaming technologies
- Advantages and disadvantages of various technologies
- OTA vs Cloud based Streaming
- Management and monitoring of Stream Analytics jobs
- Troubleshooting and Testing of Streaming jobs
- Debugging streaming diagnostic logs
- Intelligence Gallery
- Social media and streaming
- Streaming Hardware and Software
- Uses of sensors, facial recognition and ML/AI
- Web based tools and techniques
- Mobile apps and technologies
- Case studies of emerging technologies
- Applied emerging technologies
- Energy Management in Video Streaming
- Performance Evaluation

## Unit Aims

Examine available hardware/software for broadcasting

Investigate how streaming differs from OTA

Evaluate various cloud based streaming technologies

Develop an in-depth understanding of streaming performance and cost

## Unit Learning Outcomes

*(to be selected from the Mini Manual)*

LO 1 Research/Inspiration

Analyse and interpret information gathering techniques using a wide range of sources, providing visual, contextual and industry case-study research as appropriate.

Related Principle: ORIGINATE

LO 2 Concept/Ideation

Analyse research materials leading to the generation of the ideation and concepts that inform and lead to project development.

Related Principle: ORIGINATE

LO 3 Development/Prototyping

Analyse a range of potential pathways that result in appropriate solutions, informed by an understanding of the principles of the creative process.

Related Principle: INTEGRATE

LO 4 (Pre) Production

Employ relevant knowledge of production skills alongside a grasp of the creative potential of a selection of processes, materials and methods that inform creative and academic practice.

Related Principle: COLLABORATE

### Learning and Teaching Methods

This unit will be delivered using a combination of:

- Lectures / Seminars
- Online activities
- Self-directed independent study
- Peer learning, group discussion, guest speakers

### Assessment methods and tasks

Assessment tasks	Weighting (%) <i>(one grade or multi-grade unit)</i>
Portfolio	40%
Artefact presentation with collateral	60%

### Indicative Assessment Criteria

Critically evaluate formats, characteristics and trends in broadcasting and streaming (LO2)

Research relevant technologies and discuss their future impact in a selected field (LO1)

Investigate how such technologies may be used effectively (LO2)

Research, debate and agree current trends in streaming and broadcasting (LO2)

Develop an in-depth understanding of streaming technologies and their strategic uses (LO3)

Develop a prototype tool that streams and analysis the data (LO3, LO4)

## Essential Reading list

Internet Video Data Streaming, Springer, 2018

Akidau, Tyler, et al. Streaming Systems: the What, Where, When, and How of Large-Scale Data Processing. O'Reilly, 2018.

P. Stewart, The Live-Streaming Handbook: How to Create Live Video for Social Media on Your Phone and Desktop, 2018

### **Recommended Reading List**

K. Chandrasekran, Essentials of Cloud Computing, CRC Press, 2015

R. Nuckolls, Azure Data Engineering: Real-time streaming and batch analytics, 2020