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Title: Broadcast Standards
 Status: Definitive
 Code: **5501AMPCC** (127605)
 Version Start Date: 01-08-2021
 Owing School/Faculty: Engineering
 Teaching School/Faculty: Coleg Cambria

Team	Leader
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Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 57
Total Learning Hours: 200 **Private Study:** 143

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	34.5
Practical	4
Tutorial	16.5

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Practice	AS1	Signal measurements	50	
Exam	AS2	Examination	50	2

Aims

To explain the nature and composition of primarily baseband broadcast quality signals; to describe the operation of (and standards required for) broadcast

equipment to recognised professional industry practice.

Learning Outcomes

After completing the module the student should be able to:

- 1 Identify and measure parameters of typical examples of broadcast quality signals.
- 2 Explain the principles of studio and portable equipment and evaluate trade-offs in their selection and operation
- 3 Analyse the nature of broadcast signals

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Signal measurements	1	
Examination	2	3

Outline Syllabus

Audio signals, transduction and parameters

Alignment and permitted maximum levels, signal decibels, international measurement scales

Phantom power arrangements, patching and connector systems to broadcast standards

Peak vs loudness monitoring, headroom standards, dynamic range compression

Digital audio sampling frequencies, aliasing and filtering, quantisation levels & noise Inter- and Intra-studio Tx systems (e.g. AES/EBU)

Audio file formats, data rate, bit rate reduction & acceptable contribution delivery standards

Maximum Coding Level and digital headroom

Relationship between video and audio signals

Scanning, resolution, effect of Interlace, flicker, frame rates, shutter speeds, gamma

Blanking, active line, visible lines, synchronisation & framestores

Colour vision and standards, luma & chroma signals

Component and composite signals, terminology, standard test signals, calibration

Digital video signals, (e.g. Rec 601/709), Sampling formats (e.g. 4:2:2) and harmonised sampling frequency, video quantisation levels & noise

DVE, captions, studio & OB layout and operations

Inter- and Intra-studio Tx (e.g. HD-SDI), signal paths: studio to consumer, storage, play-out

Image file formats, data rate, bit rate reduction, concept of asymmetric encoding/decoding & acceptable contribution delivery standards

Networks: What are they? Why do we use them? Packets; addressing; data; capacity; storage; bandwidth; delay; errors/corruption, data loss, QoS, Internet.

Nomenclatures, EBU emission recommendations, acquisition & storage

Learning Activities

Attend all lectures, tutorial and practical sessions.
Engage with on-line learning materials via Canvas.
Research and produce the output for the practical assignment

Notes

This module provides information on the nature and composition of primarily baseband broadcast quality signals. It covers the professional operation of broadcast equipment and the standards required by broadcast organisations.