

RF Systems Networking & Media Management

Module Code:	FAM7020-B
Academic Year:	2018-19
Credit Rating:	20
School:	Department of Media Design and Technology
Subject Area:	Film and Media
FHEQ Level:	FHEQ Level 7 (Masters)

Pre-requisites:

Co-requisites:

Contact Hours

Type	Hours
Lectures	8
Tutorials	10
Directed Study	181
Examinations DO NOT USE	1

Availability Periods

Occurrence	Location/Period
BDA	University of Bradford / Semester 1 (Sep - Jan)

Module Aims

This module will provide students with a broad understanding of the function of RF Systems, Networking and Media Management in outside broadcasting. These include the options for choosing RF systems, networking technologies and video and audio recording systems. It will use industry standards and formats and learners will become adept in the use of a wide variety of different RF, networking and media management systems.

Outline Syllabus

Video paths, colour-matching, vision mixer systems, vision processing, fibre optic systems and signals.

Video and audio recording systems, integration of edit choices, timecode, codecs, wrappers, file formats, processing, graphics and audio packaging

Radio Frequency (RF) Systems - video and audio signals, levels & compression. Radio waves, polarization, antennas, gain, beam-width and the dB scale.

Transmission data rate and power levels.

Quality of Service, bit error rate, carrier to noise ratio.

Digital transmission systems, modulation and coding techniques.

Delays from digital encoding and transmission medium. Frequency Management, bandwidth allocation and regulation. Weather effects on transmission quality. Broadcast standards:

Digital Video Broadcast - Terrestrial (DVB-T). Digital Video Broadcast - Satellite (DVB-S).

Service classifications - streaming, conversational, background, interactive.

Networking Technologies - Addressing protocols, compression algorithms for video / audio transport, external network storage systems and bandwidth bottlenecks, network architecture, constituent elements, star and mesh configurations. Unicast (1-to-1), multicast (1-to-many) and broadcast (1-to-all) techniques. Medium Access Control, CDMA, TDMA, FDMA, hybrid schemes. Contention Access Schemes, Aloha and its derivatives..

Key Texts:

Ballou G (2015) Handbook for Sound Engineers, Routledge

Luther, A.C. and Inglis, A.F. (1999) Video Engineering, McGraw Hill

Pohlmann Ken C (2010) Principles of Digital Audio, McGraw Hill

Module Learning Outcomes

On successful completion of this module, students will be able to...

- 1 Apply industry practise to determine the appropriateness of networking technologies and media management practises in outside broadcasting and guard against the causes of system failures.
Evaluate the benefits of a range of video and audio recording equipment, and networking technologies to meet the needs of clients and the venue.
Synthesise a systematic knowledge of industry standards for operating networks to deliver media
- 2 Configure equipment to work with an existing network and use analysis tools for fault finding.
Monitor recording and media management systems for quality deviations and malfunctions.
- 3 Communicate ideas effectively
Solve problems methodically

Learning, Teaching and Assessment Strategy

The learning and teaching strategy is based on an integrated and blended learning experience that will include residentials, online learning through the VLE , supported work-based learning and directed study. Practical skills such as the optimal or creative use of RF systems and networking equipment, their application and limitations will be developed through a structured work-based learning supported by your work-place mentors.

Underpinning knowledge and understanding will be developed through lectures and seminars, directed reading and online exercises. A logbook demonstrating the performance of practical elements will be completed before attendance at the assessment residential. The assessment will be through an assessed scenario activity, which will include the selection

and use of RF and networking equipment to achieve specific ends, diagnosing and rectifying faults and explaining the reasons for actions. This will be supplemented by a closed book examination.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Summative	Examination - practical/labo ratory	Assessed practical scenario activity		60%	No
Summative	Examination - closed book	Closed Book Exam	0 hours	40%	Yes

Legacy Code (if applicable)

EM-4096D

Reading List

To view Reading List, please go to [rebus:list](#).