UNIVERSITY of BRADFORD

Module Descriptor

Module Details	
Module Title:	Vision Engineering
Module Code:	FAM7019-B
Academic Year:	2019-20
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
Laboratory	4
Directed Study	178

Availability	
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 vision in outside broadcasting. These include the variety of different options for capturing and transmitting video for different purposes and under different conditions. It will use industry standards and formats and learners will become adept in the use of a wide variety of different vision systems and operational techniques.

Outline Syllabus

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

types of camera mountings, lenses and panning heads. Camera systems, formats and accessories. Awareness of camera use and shot composition. Different lighting luminaires, fixings and mounts, LED and projector screens. Lighting levels, lighting problems and their solutions. Rig monitors, set up video equipment, soldering and find technical faults. Cable bashing, camera set-up, camera use (zoom, focus, shot match), camera talkback.
Check picture exposure and colour vision, interpretation of mood and look required. Follow programme scripts and lighting cues.Truck equipment: router and vision mixer systems.Ability to rig external equipment such as monitors, graphics machines, autocue and router panels etc. Use of fibre equipment as well as copper. Limitations of copper (ie. length). Advantages of fibre over copper.Knowledge of cameras and how they are rigged. Difference between SMPTE fibre and Triax. Use of fibre-triax convertors and associated problems
A knowledge of camera systems and a basic camera chain. An understanding of how the picture reaches the screen. The ability to correctly expose and colour match pictures. How to set up monitors correctly using PLUGE etc. An understanding of the SDI, HDSDI and PAL video paths. Problems associated with distribution (ie. how cable length affects different formats) An understanding of router and vision mixer systems.
Key Texts:
Luther, A.C. and Inglis, A.F. (1999) Video Engineering, McGraw Hill

Learning Outcomes	
1	Apply industry practise to determine the appropriateness of equipment and guard against the causes of fault development. Evaluate the benefits of a range of vision equipment and systems to select the most appropriate equipment for recording video signals to meet the needs of clients and the venue. Synthesise a systematic knowledge of industry standards for operating and managing and resolving problems of visions systems and facilities.
2	Rig, align, adjust and maintain vision equipment, to ensure the accurate line-up of vision monitoring, camera output and other vision facilities. Operate camera exposure, black level and colour balance controls, to match cameras and maintain overall picture quality during live and recorded programmes. Monitor video signals across different ranges to detect video-quality deviations or 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 (Blackboard), supported work-based learning and directed study. Practical skills such as the optimal or creative use of video 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 vision equipment to achieve specific ends, diagnosing and rectifying faults and explaining the reasons for actions. This will be supplemented by online exercises and a written reflection on what was learned on the module.

Mode of Assessment				
Type	**Method**	**Description**	**Length**	**Weighting**

Reading List
To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html.

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.