

Higher National Unit specification

General information for centres

Unit title: Audio Visual Systems

Unit code: F1TH 35

Unit purpose: This Unit will provide candidates with the advanced knowledge and skills required to design, set up and fault find within a wide range of audio visual products and systems.

On completion of the Unit the candidate should be able to:

- 1 Evaluate and design a range of audio visual systems.
- 2 Set up an audio visual system.
- 3 Diagnose faults within audio visual products and systems.

Credit points and level: 1 HN credit at SCQF level 8: (8 SCQF credit points at SCQF level 8*)

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

Recommended prior knowledge and skills: Access to this Unit is at the discretion of the centre. However it would be beneficial if the candidate has completed or is undertaking the following Units:

DM22 34	<i>Camera: An Introduction</i>
DM28 34	<i>Sound: An Introduction</i>
DM11 34	<i>Lighting: An Introduction</i>
DM0X 34	<i>Editing: An Introduction</i>
F1TK 34	<i>Audio Visual: Introduction to Audio Visual Technology</i>
DJ38 34	<i>Sound Production: Sound reinforcement</i>
DF68 34	<i>Multi Media Computing: Multi Media Technology</i>
DH4D 34	<i>Audio Visual Presentation 1: Introducing Audio Visual Presentation</i>

Core Skills: There are opportunities to gather evidence towards the Core Skill components of Communication and Numeracy at SCQF level 5 and Problem Solving and Information Technology at SCQF level 6, although there is no automatic certification of Core Skills or Core Skills components.

Context for delivery: If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

General information for centres (cont)

Assessment: Outcome 1 is assessed by a report identifying and evaluating equipment functions and technical specifications, setups and systems. It will include the designing of systems and setups using a line diagram.

Outcome 2 features a practical assessment which will involve candidates setting up and testing an audio visual production/presentation set up. This may be carried out as a simulation or as part of an actual working event.

Outcome 3 is assessed by practical work with candidates investigating and identifying faults pre-determined by the lecturer, and also by a report. The assessment should cover a range of audio visual products and systems with candidates applying appropriate diagnostic techniques, selecting appropriate tools to locate the faults and recording the nature and probable cause of the faults.

Higher National Unit specification: statement of standards

Unit title: Audio Visual Systems

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The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Evaluate and design a range of audio visual systems

Knowledge and/or Skills

- ◆ Functions of equipment
- ◆ Technical specifications
- ◆ Standard setups
- ◆ Line diagrams
- ◆ Health and Safety regulations

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can evaluate and design audio visual systems within both a production and presentation environment. The candidate will be required to:

- ◆ evaluate the functions of a minimum of three pieces of equipment used within a production environment
- ◆ evaluate the technical specifications required for a minimum of three pieces of equipment used within a production environment
- ◆ construct and use a line diagram to design a production set up using a minimum of three pieces of equipment
- ◆ evaluate the functions of a minimum of three pieces of equipment used within a presentation environment
- ◆ evaluate the technical specifications required for a minimum of three pieces of equipment used within a presentation environment
- ◆ construct and use a line diagram to design a presentation system using a minimum of three pieces of equipment
- ◆ identify and evaluate a minimum of three expected benefits, weaknesses and implications of the suggested solutions
- ◆ complete a risk assessment identifying and resolving all possible risks

A report including all technical information, line diagrams and evaluations should be submitted for assessment.

Higher National Unit specification: statement of standards (cont)

Unit title: Audio Visual Systems

Assessment Guidelines

The report for Outcome 1 could be based upon a response to a case study or client brief. The work submitted for assessment could be in the form of a report outlining the ideal solution for an AV presentation, live event, multi track recording or a video shoot. Where practical it may be desirable to use Outcome 1 as preparation for Outcome 2, with Outcome 2 seeing the theory put into practice.

Outcome 2

Set up an audio visual system

Knowledge and/or Skills

- ◆ Cables
- ◆ Connectors
- ◆ Line diagrams
- ◆ Inputs and outputs
- ◆ Levels
- ◆ Health and safety regulations

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ select correct cables and connectors
- ◆ attach cables and connectors correctly
- ◆ connect equipment in accordance with the line diagram
- ◆ select correct inputs to correlate with attached connections
- ◆ set appropriate levels to produce clean signals
- ◆ follow current health and safety regulations

The candidate must set up a minimum of three pieces of equipment. An observation checklist should be used to assess the candidate.

Assessment Guidelines

This assessment could comprise either a simulation or part of an actual event, taking the form of a practical task in which candidates either set up equipment in accordance with a line diagram produced by the delivery lecturer, or by following their own line diagram produced by in Outcome 1, subject to approval from the delivery lecturer prior to execution.

Higher National Unit specification: statement of standards (cont)

Unit title: Audio Visual Systems

Outcome 3

Diagnose faults within audio visual products and systems

Knowledge and/or Skills

- ◆ Systematic fault finding
- ◆ Test procedures
- ◆ Diagnostic tools
- ◆ Isolation of faults
- ◆ First line maintenance
- ◆ Health and safety regulations

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ systematically identify and evaluate faults in a minimum of two different pieces of equipment, one of which should be computer based
- ◆ construct a fault finding checklist for one piece of equipment
- ◆ rectify the fault within the piece of equipment
- ◆ systematically identify and evaluate faults in an audio visual system or production set up using a minimum of three separate items of equipment
- ◆ rectify faults identified within the system or set up
- ◆ follow current health and safety regulations

This Outcome is both a practical and report-based assessment, with candidates identifying a minimum of three complex faults pre-set by the delivery lecturer. The evidence should be in the form of a report covering all Evidence Requirements, the fault finding checklist plus annotated diagrams. Equipment used should reflect current AV presentation systems and productions.

Assessment Guidelines

An example of a production set up would be a camcorder, audio mixer and microphones a complex set up may involve a location multi camera shoot involving three cameras, mixing desk, monitors and audio feeds.

An example of an audio visual system would be a laptop, projector and speakers, whereas a complex set up may involve an event with multiple speakers which requires multiple microphones, audio mixer, PA system, projector and lighting with gobos.

An example of a computer system would include a computer base unit, keyboard, mouse, printer, scanner, monitor and related software.

The report may be in the format of a production folder, audio visual presentation or interactive product.

It is recommended that a basic 23 piece computer toolkit is used for first line maintenance.

Administrative Information

Unit code: F1TH 35

Unit title: Audio Visual Systems

Superclass category: KG

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History of changes:

Version	Description of change	Date

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Higher National Unit specification: support notes

Unit title: Audio Visual Systems

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

The candidate should be encouraged to become familiar with the complexity of audio visual and production setups used within the industry. Deconstructing the design and equipment required for a large event such as major international music and film awards ceremonies may help to contextualise this and illustrate the relevance of the knowledge and skills to be gained as part of this Unit. Visits to theatres, music venues and museums would also be beneficial in order to see audio visual setups in practice.

Candidates may gain a practical understanding of how audio visual systems and production systems work together within different environments. Room size, acoustics, lighting, access to power, audience size, etc are important factors to consider alongside the actual equipment design. Using real life case studies could be beneficial in helping candidates understand the variety of situations within which audio visual presentation systems are used e.g. in a classroom with an interactive whiteboard or a corporate conference with complex information shown using visual presentation software with video links

Candidates should be given as much direct practical experience of equipment as possible to allow them to not only theoretically understand strengths and weaknesses, but also to see and hear them. Having access to decommissioned pieces of equipment would be beneficial in allowing candidates to see inside the equipment and gaining some understanding of their components.

Diagnosing faults is a key element of this Unit. Candidates are required to work through problem solving in a logical manner using and constructing fault finding diagrams. It is recommended that practical access to equipment is encouraged, at this stage, as far as circumstances permit.

Guidance on the delivery and assessment of this Unit

This Unit allows the candidate to design and construct more complex audio visual presentation and production setups than in other Higher National Units such as DH4D 34 *Audio Visual Presentations 1: Introducing Audio Visual Programmes* and builds on knowledge and skills gained in the Unit F1TK 34 *Audio Visual: An Introduction to Audio Visual Technology*. The emphasis is on practical design and setting up of audio visual and production equipment, of which fault finding is a key element. The choice of equipment will depend on the facilities available, however practices and procedures should reflect current industry standards.

Assessment for the Unit could comprise either three discrete assessments, or Outcomes 1 and 2 could be combined, with candidates in Outcome 2 setting up a system they have designed in Outcome 1.

Higher National Unit specification: support notes (cont)

Unit title: Audio Visual Systems

Opportunities for developing Core Skills

The delivery and assessment of this Unit may contribute towards the components of the Core Skill Communication at SCQF level 5.

Within Outcome 1 candidates are encouraged to interpret factual information, identify key facts, and then summarise this information in a report. As part of assessment for all Outcomes candidates are also asked to produce a factual report which identifies and evaluates equipment choices, audio visual systems and production setups. Candidates may use case studies as a basis for their choices which would involve interpreting the appropriate requirements, this may be used as part of the learning process or as a basis for assessment.

The delivery and assessment of this Unit may contribute towards the Core Skill of Information Technology at SCQF level 6.

Within all Outcome 1 of this Unit candidates may use the internet as a research tool and use word and relevant templates to produce assessment documentation. Outcome 1, 2 and 3 all involve an understanding of technology but Outcome 3 in particular deals with identifying and evaluating faults with a computer based system.

The delivery and assessment of this Unit may contribute to the Core Skill of Problem Solving at SCQF level 6.

Within Outcome 3 of this Unit candidates are required to identify technical problems with equipment, setups and systems in a logical manner. This is assessed as part of the Unit with a practical assessment resulting in candidates producing a fault finding diagram.

The delivery and assessment of this Unit may contribute to the Core Skill of Numeracy at SCQF level 5.

All Outcomes within this Unit will involve candidates working with numbers in the form of technical data and specifications, possibly analysing graphs and constructing their own diagrams. Candidates for example may have to calculate the distance a projector is positioned from a screen dependent on the specifications of the projector and the size of screen required, or use the inverse square law when planning the positioning of lights.

Open learning

This Unit may be delivered by open learning, provided the candidate has access to the appropriate hardware and software required by the Outcomes and that centres employ measures to ensure the sufficiency and authenticity of candidate evidence for transmission to the assessor.

Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (www.sqa.org.uk).

General information for candidates

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This Unit is designed to enable you to gain advanced knowledge and skills required to design, set up and fault find within a wide range of audio visual products and systems.

On completion of the Unit you should be able to:

- 1 Evaluate and Design a range of audio visual systems.
- 2 Set up an audio visual system.
- 3 Diagnose faults within audio visual products and systems.

Audio visual systems are designed for a wide range of purposes from using visual presentation software within a classroom to designing the technical requirements for an event such as an international music artist performing at a large scale venue. This Unit will give you the knowledge and skills to understand key factors involved in designing an audio visual presentation alongside a practical understanding of how to set the equipment up and logically diagnose faults.

Assessment for this Unit will involve:

- 1 Constructing a report which will require you to identify and evaluate equipment functions and technical specifications used within audio visual system and production setups. You will also design an audio visual system and a production set up using line diagrams.
- 2 A practical assessment in which you will be required to set up an audio visual system, using a minimum of three pieces of equipment.
- 3 Constructing a report which will be based upon your practical skills in systematically identifying, diagnosing and rectifying faults in both individual pieces of equipment and audio visual systems and production set ups.

Although there is no automatic certification of Core Skills or Core Skills components, during this Unit you may have the opportunity to develop important Core Skills which could include components of Communication and Numeracy at SCQF level 5 and Information Technology and Problem Solving at SCQF level 6.