Higher National Unit specification

General information

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Unit code: H6X2 33

Superclass: XM

Publication date: March 2014

Source: Scottish Qualifications Authority

Version: 01

Unit purpose

The Unit is aimed at learners working within the Electronic Fire and Security Systems Industry or those with an interest in gaining employment within this sector.

The Unit is designed to enable the learner to develop a general knowledge and understanding of the commissioning process, as well as specific knowledge and practical skills related to intruder, access, CCTV and fire systems.

This Unit forms part of the PDA in Providing Electronic Fire and Security Systems. This PDA provides underpinning knowledge and skills for the SVQ level 3 in Providing Electronic Fire and Security Systems at SCQF level 6. The SVQ forms part of the Modern Apprenticeship in Electronic Security Systems.

Outcomes

On successful completion of the Unit the learner will be able to:

1 Explain the general requirements for commissioning electronic fire and security systems.
2 Demonstrate the process for commissioning intruder alarm systems.
3 Demonstrate the process for commissioning access control systems.
4 Demonstrate the process for commissioning CCTV systems.
5 Demonstrate the process for commissioning fire alarm systems.

Credit points and level

1 Higher National Unit credit at SCQF level 6: (8 SCQF credit points at SCQF level 6)

Higher National Unit specification: General information (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Recommended entry to the Unit

While entry is at the discretion of the centre, learners would normally be expected to have attained the following:

F3GF 11   *Numeracy* (Core Skill Unit), SCQF level 5

or

C100 11   *Mathematics: Mathematics 1, 2 and 3* (Intermediate 2), SCQF level 5

or

C101 11   *Mathematics: Mathematics 1, 2 and Applications* (Intermediate 2), SCQF level 5

or

2500   Standard Grade *Maths* (Credit), SCQF level 5

together with:

F3GB 11   *Communication* (Core Skills Unit), SCQF level 5

or

C270 11   *English* (Intermediate 2), SCQF level 5

or

0860   Standard Grade *English* (Credit), SCQF level 5

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes for this Unit specification.

There is no automatic certification of Core Skills or Core Skill components in this Unit.

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.

Equality and inclusion

This Unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website **www.sqa.org.uk/assessmentarrangements**.

Higher National Unit specification: Statement of standards

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Acceptable performance in this Unit will be the satisfactory achievement of the standards set out in this part of the Unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

Outcome 1

Explain the general requirements for commissioning electronic fire and security systems.

Knowledge and/or Skills

♦ Legal requirements for commissioning electronic fire and security systems
♦ Codes of practice for commissioning electronic fire and security systems, including DD263, BS EN50131, BS 8243, clause 39 of BS5839:2002, NCP 104 of BS EN 50132 series and NACP 30 of BS EN 50133–1
♦ Customer care during the commissioning stage

Evidence Requirements

The learner should provide oral and/or written evidence to satisfy the Evidence Requirements.

There is no sampling in this Outcome. All aspects of Knowledge and Skills must be assessed.

The standard and quality of the evidence produced by the learner should be reflective of SCQF level 6 and demonstrate a detailed knowledge and understanding of all items in the Knowledge and Skills Section.

For this Outcome, each learner will:

♦ explain correctly the legal requirements for commissioning electronic fire and security systems.
♦ explain correctly the codes of practice for commissioning electronic fire and security systems, including DD263, BS EN50131, BS 8243, clause 39 of BS5839:2002, NCP 104 of BS EN 50132 series and NACP 30 of BS EN 50133-1.
♦ explain correctly the requirements and importance of customer care during the commissioning stage.

The summative assessment tasks for Outcome 1 will be undertaken in closed-book, timed and supervised conditions. All summative tasks must be unseen. Learners are not allowed to use reference sources. Approximately one hour should be allocated to the summative assessment of Outcome 1.

Higher National Unit specification: Statement of standards (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Outcome 2

Demonstrate the process for commissioning intruder alarm systems.

Knowledge and/or Skills

♦ System checks to be carried out at commissioning stage for intruder alarm systems
♦ Operational checks for intruder alarm systems
♦ Commissioning and handover documentation
♦ Handover of intruder alarm systems

Evidence Requirements

The learner should provide oral and/or written evidence to satisfy the Evidence Requirements.

There is no sampling in this Outcome. All aspects of Knowledge and Skills must be assessed.

The standard and quality of the evidence produced by the learner should be reflective of SCQF level 6 and demonstrate a detailed knowledge and understanding of all items in the Knowledge and Skills Section.

For this Outcome, each learner will:

♦ demonstrate correctly the completion of systems checks for intruder alarm systems.
♦ complete accurately the required documentation for the commissioning of intruder alarm systems, including commissioning certificate, system log book, handover certificate and operational checklist.
♦ demonstrate correctly the operational checks for intruder alarm systems during commissioning.
♦ demonstrate correctly the handover procedure for intruder alarm systems.

The summative assessment tasks for Outcome 2 will be undertaken in closed-book, timed and supervised conditions. All summative tasks must be unseen. Learners are not allowed to use reference sources. Approximately one hour should be allocated to the summative assessment of Outcome 2.

Higher National Unit specification: Statement of standards (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Outcome 3

Demonstrate the process for commissioning access control systems.

Knowledge and/or Skills

♦   System checks to be carried out at commissioning stage for access control systems
♦   Operational checks for access control systems
♦   Commissioning and handover documentation for access control systems
♦   Handover of access control systems

Evidence Requirements

The learner should provide oral and/or written evidence to satisfy the Evidence Requirements.

There is no sampling in this Outcome. All aspects of Knowledge and Skills must be assessed.

The standard and quality of the evidence produced by the learner should be reflective of SCQF level 6 and demonstrate a detailed knowledge and understanding of all of items in the Knowledge and Skills Section.

For this Outcome, each learner will:

♦   demonstrate correctly the completion of systems checks for access control systems.
♦   complete accurately the required documentation for the commissioning of access control systems, including commissioning certificate, system log book, handover certificate and operational checklist.
♦   demonstrate correctly the operational checks for access control systems during commissioning.
♦   demonstrate correctly the handover procedure for access control systems.

The summative assessment tasks for Outcome 3 will be undertaken in closed-book, timed and supervised conditions. All summative tasks must be unseen. Learners are not allowed to use reference sources. Approximately one hour should be allocated to the summative assessment of Outcome 3.

Higher National Unit specification: Statement of standards (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Outcome 4

Demonstrate the process for commissioning CCTV systems.

Knowledge and/or Skills

♦ System checks to be carried out at commissioning stage for CCTV systems
♦ Operational checks for CCTV systems
♦ Commissioning and handover documentation for CCTV systems
♦ Handover of CCTV systems

Evidence Requirements

The learner should provide oral and/or written evidence to satisfy the Evidence Requirements.

There is no sampling in this Outcome. All aspects of Knowledge and Skills must be assessed.

The standard and quality of the evidence produced by the learner should be reflective of SCQF level 6 and demonstrate a detailed knowledge and understanding of all items in the Knowledge and Skills Section.

For this Outcome, each learner will:

♦ demonstrate correctly the completion of systems checks for CCTV systems.
♦ complete accurately the required documentation for the commissioning of CCTV systems, including commissioning certificate, system log book, handover certificate and operational checklist.
♦ demonstrate correctly operational checks for CCTV systems during commissioning.
♦ demonstrate correctly the handover procedure for CCTV systems.

Assessment is closed-book and will be carried out in timed and supervised conditions. Assessment tasks must be unseen. As this is a closed-book assessment, the use of reference sources is not allowed. Approximately one hour should be allocated to the summative assessment of Outcome 4.

Higher National Unit specification: Statement of standards (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Outcome 5

Demonstrate the process for commissioning fire alarm systems.

Knowledge and/or Skills

♦ System checks to be carried out at commissioning stage for fire alarm systems
♦ Operational checks for fire alarm systems
♦ Commissioning and handover documentation for fire alarm systems
♦ Handover of fire alarm systems

Evidence Requirements

The learner should provide oral and/or written evidence to satisfy the Evidence Requirements.

There is no sampling in this Outcome. All aspects of Knowledge and Skills must be assessed.

The standard and quality of the evidence produced by the learner should be reflective of SCQF level 6 and demonstrate a detailed knowledge and understanding of all items in the Knowledge and Skills Section.

For this Outcome, each learner will:

♦ demonstrate correctly the completion of systems checks for fire alarm systems.
♦ complete accurately the required documentation for the commissioning of fire alarm systems, including commissioning certificate, system log book, handover certificate and operational checklist.
♦ demonstrate correctly operational checks for fire alarm systems during commissioning.
♦ demonstrate correctly the handover procedure for fire alarm systems.

The summative assessment tasks for Outcome 5 will be undertaken in closed-book, timed and supervised conditions. All summative tasks must be unseen. Learners are not allowed to use reference sources. Approximately one hour should be allocated to the summative assessment of Outcome 5.

Higher National Unit specification: Statement of standards (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

For all Outcomes

Centres should devise Instruments of Assessment that will allow the learner to meet the Evidence Requirements for the Outcome to the required standard (See *Guide to Assessment*). It is recommended that centre devised Instruments of Assessment are prior verified by SQA.

Assessment for this Unit can be carried out at the discretion of the centre in the following ways:

♦ Outcome by Outcome
♦ Combining Outcomes
♦ One holistic assessment of the Unit

Suggestions for approaches to assessment can be found in the Support Notes of this Unit.

As this is a 40 hour Unit, approximately 4 hours should be dedicated to summative assessment for the entire Unit.

Higher National Unit Support Notes

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Unit Support Notes are offered as guidance and 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

This Unit forms part of the PDA in Providing Electronic Fire and Security Systems. This PDA provides underpinning knowledge and skills for the SVQ level 3 in Providing Electronic Fire and Security Systems at SCQF level 6. The SVQ forms part of the Modern Apprenticeship in Electronic Security Systems.

Although not directly awarded, completion of the Modern Apprenticeship Award gives opportunities to apply for professional recognition through the Institute of Engineering Technology and successful recognition will result in the EngTech qualification being awarded.

It may be possible to progress from the Modern Apprenticeship Award to other qualifications.

Centres should ensure that learners are presented with sufficient theoretical information to succeed in the assessment of this Unit.

Outcome 1

This Outcome covers the underpinning knowledge and skills relating to the general requirements for commissioning electronic fire and security systems.

Learners are required to have a clear understanding of the importance of customer care at the commissioning and handover stage, this should include the correct instruction to the client of the operation of the system, methods of setting and using recording equipment for all electronic fire and security systems. The procedures customers should use to contact the maintenance company for assistance should also be explained.

Intruder Alarms

Learners should gain an understanding of the standards and codes of practice relating to the commissioning of an intruder alarm system. The standards that should be covered are:

♦ BS 8243
♦ DD 263
♦ BS EN50131

Higher National Unit Support Notes (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Fire Alarms

Learners should gain an understanding of the standards and codes of practice relating to the commissioning of a fire alarm system. The standards that should be covered are:

♦ BS 5839:2002

Access Control Systems

Learners should gain an understanding of the standards and codes of practice relating to the commissioning of an access control system. The standards that should be covered are:

♦ NACP 30 of BS EN 50133–1

CCTV

Learners should gain an understanding of the standards and codes of practice relating to the commissioning of a CCTV system. The standards that should be covered are:

♦ NCP 104 of BS EN 50132

During Outcome 1, learners should understand what the standards say about the set up procedure for each system and the settings that should be adjusted in order to meet the relevant codes of practice and standards. For example, the setting and un-setting of intruder alarms in accordance with BS8243, using the Rotakin test in accordance with BS EN 50132, the setting up procedure for magnetic locks in accordance with BS EN 50133 and finally the testing of sounders in accordance with BS 5839.

Outcome 2

This Outcome covers the necessary underpinning knowledge and skills that are relevant to the process of commissioning and handing over intruder alarm systems.

Learners are required to have an understanding of the procedures when arriving at a customer's premises. The correct operational checks required in accordance with the relevant standards for both audible and signalled systems should be demonstrated. These should include:

♦ Physical inspection of the installed system, including reference to specification, drawing and manufacturer's guidelines
♦ Electrical tests, including ac, dc voltages, current load in active and quiescent
♦ Visual inspection of the installed system, including referring to the specification, insurance requirements and programming

Learners should understand why these operational checks are undertaken; the importance of completing relevant documentation to ensure that the system remains fully operational throughout the commissioning process.

Higher National Unit Support Notes (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

The requirements of relevant standards and codes of practice for the commissioning of intruder alarm systems should be explained. Learners should also be aware of additional checks required. For example, due to client requests, after false activations.

The learner should be able to interpret circuits and diagrams and therefore be able to provide information regarding an installed system. This information would include electrical readings and should be collated for the benefit of both the customer and maintenance engineer. The importance of this information and how it is used for preventative and corrective maintenance purposes should be explained to the learner.

Learners should be able to identify relevant components in a circuit. These should include power supplies, detection devices input/output modules.

By using circuit diagrams and block diagrams learners should be able to identify faulty components and therefore explain the fault condition. This should include low power to devices from the main panel or auxiliary power supplies, faulty devices, short and open circuits.

Where a fault condition is established the learner should be able to explain the effect that the fault will have on the equipment and system. For example, this would include over/under sensitive devices, power fluctuation, signalling equipment.

Learners should have an understanding of the relevant test equipment available for use in intruder alarm systems and be able to connect and interpret results for commissioning purposes. Typical test equipment should include digital volt meters, battery testers.

Outcome 3

This Outcome covers the necessary underpinning knowledge and skills that are relevant to the process of commissioning and handing over access control systems.

Learners should have an understanding of the appropriate operational system checks to be carried out at the commissioning stage of access control systems. The different tests and the equipment that can be used should be demonstrated to learners

The correct completion of system documentation and its part in the commissioning process should be explained to learners. Documentation should include completion certificate, handover checklist, system logbook and cable test results.

Learners are required to have an understanding of the importance of customer care at the handover stage. This should include instructing the client on how to operate the system and methods of setting recording equipment. The procedures for contacting the maintenance company for assistance should also be explained.

The requirements of relevant standards and codes of practice for the commissioning of access control systems should be explained. Learners should also be aware of additional checks required. For example, due to client requests, after false activations.

Higher National Unit Support Notes (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

The learner should be able to interpret circuits and diagrams and therefore be able to provide information regarding an installed system. This information would include electrical readings and should be collated for the benefit of both the customer and maintenance engineer. The importance of this information and how it is used for preventative and corrective maintenance purposes should be explained to the learner.

Learners should be able to identify relevant components in the circuit. These should include power supplies and input/output modules. For example, break glasses, request to exit switches and the monitoring of door locks.

By using circuit diagrams and block diagrams learners should be able to identify faulty components and therefore explain the fault condition. This should include low power to devices from the main panel or auxiliary power supplies, system design not meeting operational requirements. For example, lock not receiving enough current to stay powered.

Where a fault condition is established the learner should be able to explain the effect that the fault will have on the equipment and system. For example, this would include voltage drop over long cable runs, communication errors on networkable systems and/or locking mechanisms pulling too much current from the power supply unit.

Learners are required to have an understanding of the procedures when arriving at a customer's premises. The correct operational checks required in accordance with the relevant standards. The reason that these checks are undertaken and the importance of completing the relevant documentation to ensure that the system remains fully operational should be explained to learners.

Learners should have an understanding of the relevant test equipment available for use in access control systems and be able to connect and interpret results for commissioning purposes. Typical test equipment should include digital volt meters, battery testers.

Outcome 4

This Outcome covers the necessary underpinning knowledge and skills that are relevant to the process of commissioning and handing over CCTV systems.

Learners should have an understanding of the appropriate operational system checks to be carried out at the commissioning stage of CCTV systems, including analogue and digital systems. The different tests and the equipment that can be used for this process should be demonstrated to learners. A basic knowledge of the Rotakin test would be an advantage to learners.

The correct completion of system documentation and its part in the commissioning process should be explained to learners. Documentation should include completion certificate, Rotakin results, handover checklist, system logbook and cable test results for analogue and digital systems.

Higher National Unit Support Notes (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Learners are required to have an understanding of the importance of customer care at the handover stage. This should include instructing the client on how to operate the system and methods of setting recording equipment. The procedures for contacting the maintenance company for assistance should also be explained.

The requirements of relevant standards and codes of practice for the commissioning of CCTV systems should be explained. Learners should also be aware of additional checks required. For example, due to client requests, after false activations.

The learner should be able to interpret circuits and diagrams and therefore be able to provide information regarding an installed system. This information would include electrical readings and should be collated for the benefit of both the customer and maintenance engineer. The importance of this information and how it is used for preventative and corrective maintenance purposes should be explained to the learner.

Learners should be able to identify relevant components in the circuit. These should include CCD chips, lenses, iris, IR lenses, power supplies, DVR, monitors.

By using circuit diagrams and block diagrams learners should be able to identify faulty components and therefore explain the fault condition. This should include low power to devices from main panel or auxiliary power supplies, picture jittering, black and white picture, no signal.

Where a fault condition is established the learner should be able to explain the effect that the fault will have on the equipment and system. For example, synchronization problems, ground loop errors and voltage drop along cable runs.

Learners are required to have an understanding of the procedures when arriving at a customer's premises. The correct operational checks required in accordance with the relevant standards. The reason that these checks are undertaken and the importance of completing the relevant documentation to ensure that the system remains fully operational should be explained to learners.

Learners should have an understanding of the relevant test equipment available for use in CCTV systems and be able to connect and interpret results for commissioning purposes. Typical test equipment should include digital volt meters, battery testers, portable video monitor, cat 5 tester.

Higher National Unit Support Notes (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Outcome 5

This Outcome covers the necessary underpinning knowledge and skills that are relevant to the process of commissioning and handing over fire alarm systems.

Learners should have an understanding of the correct completion of the operational system checks and tests as described in accordance with BS 5839 Part 1.

The documentation that forms part of the completion and handover of a fire system should be explained. Documents should include:

♦ Acceptance certificate
♦ Design certificate
♦ Verification certificate
♦ Installation certificate
♦ Electrical test results
♦ As-fitted drawings
♦ Operational and maintenance manuals

Learners are required to have an understanding of the importance of customer care at the handover stage. This should include instructing the client on how to operate the system and methods of setting recording equipment. The procedures for contacting the maintenance company for assistance should also be explained.

The importance of recording and reducing the incidents of false alarms should be explained to the learner.

The learner should be able to interpret circuits and diagrams and therefore be able to provide information regarding an installed system. This information would include electrical readings and should be collated for the benefit of both the customer and maintenance engineer. The importance of this information and how it is used for preventative and corrective maintenance purposes should be explained to the learner.

Learners are required to have an understanding of the procedures when arriving at a customer's premises. The correct operational checks required in accordance with the relevant standards. The reason that these checks are undertaken and the importance of completing the relevant documentation to ensure that the system remains fully operational should be explained to learners.

Learners should have an understanding of the relevant test equipment available for use on fire alarm systems and be able to connect and interpret results. Typical test equipment should include digital volt meters, sound level meters and smoke poles.

Higher National Unit Support Notes (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Guidance on approaches to delivery of this Unit

This Unit can be delivered as a free-standing Unit or as part of a Group Award. This Unit is mandatory in the PDA Providing Electronic Fire and Security Systems. The PDA is designed to give learners the underpinning knowledge and skills to support the SVQ level 3 in Providing Electronic Fire and Security Systems. The SVQ forms part of the Modern Apprenticeship Award in Electronic Security Systems.

A variety of delivery approaches could be adopted in this Unit and, although there is no preferred order of teaching, a systematic approach is recommended. Practitioners should use their professional judgement in designing and delivering the Unit so that it is appropriate, relevant and motivating for individual learners. Approaches should be learner-centred, participative and practical, for example, group activities, one-to-one tutorials, differentiated learning materials, visual aids.

Links in this Unit should be made to the National Occupational Standards (NOS) for the Security Sector and in particular:

SFS SYS 11	Test and confirm operation of electronic security systems
SFS SYS 12	Commission electronic security systems
SFS SYS 17	Handover electronic security systems

Additionally, learners could use information or resources acquired during this Unit to help with the completion of the above Common Core NOS Units.

To encourage learner understanding of his/her role in working within the electronic fire and security industry, learners could be asked to carry out home study activities where they will research company processes and procedures for commissioning and handing over electronic fire and security systems.

In addition, formative activities involving peer group assessment would benefit learner breadth of application of Knowledge and/or Skills for this Unit. It is recommended that use of a wiki or similar might be encouraged to allow learners to share knowledge, research findings and examples for the range of Knowledge and/or Skills for this Unit.

Where resources permit, centres should use technology as much as possible to support learning, teaching and assessment. This could include, for example:

♦ Compiling and maintaining e-portfolios
♦ Web-based research
♦ Game based learning
♦ Using chat rooms for discussion
♦ Using virtual learning environments
♦ Submission of assessed work through VLE, e-mail

Higher National Unit Support Notes (cont)

Unit title: Electronic Fire and Security Systems Installation:
                    Commissioning (SCQF level 6)

The learning and teaching approaches should be appropriate to the needs of the particular learner. The learning and teaching approaches used should encourage learners to be aware of the Knowledge and/or Skills gained, to retain these and use in other contexts. Wherever possible, learners should be encouraged to carry out the tasks with relevance to their own experience of the work-related environment.

Guidance on approaches to assessment of this Unit

Evidence can be generated using different types of assessment. The following are suggestions only. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

Centres should create formative assessments that are both appropriate to the individual's needs and which also prepare the learner for summative assessment. Summative assessment should only take place when the learner has developed the knowledge and skills at the required level for the Unit.

Lecturers should provide adequate opportunities for informal assessment to take place prior to learners undertaking summative assessments. Lecturers may give learners advice and support during any informal assessment in order to prepare them for summative assessment.

Centres may use Instruments of Assessment which are considered by lecturers to be most appropriate. Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that could be transferable to work or further and higher education.

A range of different assessment methods could be used. Suggested examples can be found in SQA's Guide to Assessment. **www.sqa.org.uk**

Records of all assessment instruments used and evidence produced by each learner for summative assessment purposes — oral/written/practical — must be retained for internal and external verification purposes.

Practical evidence can be either:

♦   Assessor checklist with oral questioning
    or
♦   Photographic/video evidence

All learner evidence must be signed and dated by the assessor thus ensuring authentication.

Higher National Unit Support Notes (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Opportunities for e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at **www.sqa.org.uk/e-assessment**.

Opportunities for developing Core and other essential skills

There is no automatic certification of Core Skills in this Unit. However, there are opportunities to develop aspects of Core Skills in *Communication* (Written and/or Oral), *Problem Solving* (Critical Thinking and Planning and Organising) and *Information and Communication Technology (ICT)* (Accessing Information).

Communication: Oral Communication

The Core Skill component Oral Communication at SCQF level 6 could be developed in this Unit. The general skill for this component is — *Produce and respond to oral communication on a complex topic.* This component could be developed through participating in discussions, one-to-one dialogues and group work for both formative and summative assessment purposes. Tasks involving group activities and joint feedback sessions would offer the learner opportunities to make a contribution to a discussion on a complex topic.

Communication: Written Communication

The Core Skill component Written Communication (Writing) at SCQF level 5 could be developed in this Unit. The general skill for this component is — *Produce well-structured written communication.* This component could be developed through research activities and the production of reports, essays or other forms of written communication. For example, operational checklists, commissioning certificates, handover certificates and the completion of log books. Some learners may develop this skill at SCQF level 6.

Problem Solving: Critical Thinking

The Core Skill component Critical Thinking at SCQF level 5 could be developed in this Unit. The general skill for this component is — *Analyse a situation or issue.* This component could be developed where a situation or issue has arisen in the course of the learner's work or study. The learner would need to analyse and evaluate the situation or issue and devise a strategy to deal with it. The learner should reflect on and evaluate the success of the strategy. Different practical situations could be created where learners will need to assess the likelihood of an accident occurring. Alternatively, the tutor could provide a case study.

Higher National Unit Support Notes (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Problem Solving: Planning and Organising

The Core Skill component Planning and Organising at SCQF level 5 could be developed in this Unit. The general skill for this component is — *Plan, organise and complete a task.* This component could be developed through planning, organising and completing a task. The learner would need to develop a plan, identify and obtain the required resources and then carry out the task. Resources could include, for example, time available, paper work and documentation, set procedures, people and equipment. The learner must decide on how the task will be managed. This could include allocation of responsibilities in a group context. Planning and organising skills could be developed through the completion of home study, research and practical tasks.

Information and Communication Technology (ICT): Accessing Information

The Core Skill component Accessing Information at SCQF level 6 could be developed in this Unit. The general skill for this component is — *Use ICT independently to carry out complex searches across a range of tasks.* This component could be developed by carrying out searches and accessing information for tasks in the Unit. This could involve some searching on complex tasks on unfamiliar information.

Other Essential Skills developed through the completion of this Unit

♦ Time Management: through the completion of projects and research task the learner will learn new skills in how to manage their own time to help achieve a common goal.

History of changes to Unit

Version	Description of change	Date

General information for learners

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

This section will help you decide whether this is the Unit for you by explaining what the Unit is about, what you should know or be able to do before you start, what you will need to do during the Unit and opportunities for further learning and employment.

The Unit is aimed at those working within the Electronic Fire and Security Systems Industry or with an interest in gaining employment within this sector.

This Unit is designed to enable you to develop a general knowledge and understanding of the commissioning process as well as specific knowledge and practical skills related to intruder, access, CCTV and fire systems.

This Unit forms part of the PDA in Providing Electronic Fire and Security Systems. This PDA provides underpinning knowledge and skills for the SVQ level 3 in Providing Electronic Fire and Security Systems at SCQF level 6. The SVQ forms part of the Modern Apprenticeship in Electronic Security Systems.

On completion of this Unit you will be able to:

1   Explain the general requirements for commissioning electronic fire and security systems.
2   Demonstrate the process for commissioning intruder alarm systems.
3   Demonstrate the process for commissioning access control systems.
4   Demonstrate the process for commissioning CCTV systems.
5   Demonstrate the process for commissioning fire alarm systems.

You will participate in class lectures, group activities and home study.

There are different ways in which you can be assessed. Questions will be generated to test your knowledge and understanding. Practical exercises will be used to assess your skills.

There is no automatic certification of Core Skills in this Unit. However, there are opportunities to develop aspects of Core Skills in *Communication* (Written and/or Oral), *Problem Solving* (Critical Thinking and Planning and Organising) and *Information and Communication Technology (ICT)* (Accessing Information).

Communication: Oral Communication

The Core Skill component Oral Communication at SCQF level 6 could be developed in this Unit. The general skill for this component is — *Produce and respond to oral communication on a complex topic.* This component could be developed through participating in discussions, one-to-one dialogues and group work for both formative and summative assessment purposes. Tasks involving group activities and joint feedback sessions would offer you opportunities to make a contribution to a discussion on a complex topic.

General information for learners (cont)

Unit title: Electronic Fire and Security Systems Installation: Commissioning (SCQF level 6)

Communication: Written Communication

The Core Skill component Written Communication (Writing) at SCQF level 5 could be developed in this Unit. The general skill for this component is — *Produce well-structured written communication.* This component could be developed through research activities and the production of reports, essays or other forms of written communication. For example, operational checklists, commissioning certificates, handover certificates and the completion of log books. You may develop this skill at SCQF level 6.

Problem Solving: Critical Thinking

The Core Skill component Critical Thinking at SCQF level 5 could be developed in this Unit. The general skill for this component is — *Analyse a situation or issue.* This component could be developed where a situation or issue has arisen in the course of your work or study. You would need to analyse and evaluate the situation or issue and devise a strategy to deal with it. You should reflect on and evaluate the success of the strategy. Different practical situations could be created where you will need to assess the likelihood of an accident occurring. Alternatively, your tutor could provide a case study.

Problem Solving: Planning and Organising

The Core Skill component Planning and Organising at SCQF level 5 could be developed in this Unit. The general skill for this component is — *Plan, organise and complete a task*. This component could be developed through planning, organising and completing a task. You would need to develop a plan, identify and obtain the required resources and then carry out the task. Resources could include, for example, time available, paper work and documentation, set procedures, people and equipment. You must decide on how the task will be managed. This could include allocation of responsibilities in a group context. Planning and organising skills could be developed through the completion of home study, research and practical tasks.

Information and Communication Technology (ICT): Accessing Information

The Core Skill component Accessing Information at SCQF level 6 could be developed in this Unit. The general skill for this component is — *Use ICT independently to carry out complex searches across a range of tasks.* This component could be developed by carrying out searches and accessing information for tasks in the Unit. This could involve some searching on complex tasks on unfamiliar information.

Other Essential Skills developed through the completion of this Unit

♦ Time Management: through the completion of projects and research task you will learn new skills in how to manage your own time to help achieve a common goal.

Although not directly awarded, completion of the Modern Apprenticeship Award gives opportunities to apply for professional recognition through the Institute of Engineering Technology and successful recognition will result in the EngTech qualification being awarded.