EduQual Diploma in Medical Gas Pipeline Systems: Authorising Engineer (SCQF Level 11)

QUALIFICATION SUMMARY

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1 Introduction and Summary

The EduQual Diploma in Medical Gas Pipeline Systems: Authorising Engineer (SCQF Level 11) is designed to meet the needs of Learners seeking to qualify as Authorising Engineers for medical gas pipeline systems. A person acting in the role of Authorising Engineer (AE) has a wide scope of practice as set out in HTM 02-01. Roles and responsibilities of the AE include the provision of independent technical advice and guidance, MGPS design and validation, determining suitability and keeping registers of those appointed of Authorised Persons (AP), records and information management, through to planning and delivering written and oral presentations, training needs analysis personal and professional development.

The Qualification has been produced to conform to the requirements of the SCQF, the RQF and the National Occupational Standards for Skills for Health.

2 Aims

The aims of this Qualification will allow Learners to:

- Apply theoretical understanding of medical gas pipeline systems to the role of Authorising Engineer
- Critically reflect upon own medical gas pipeline systems skills and thereby allow Learners to prepare for senior roles within their organisation
- Develop a lifelong learning attitude to education and training
- Gain a critical insight into contemporary research and leading-edge practice within the field of medical gas pipeline systems
- Develop considerable autonomy in their learning and enhance their ability to plan, implement and evaluate the skills, knowledge and understanding of the role of Authorising Engineer in a group context
- Demonstrate originality and enterprise in approaching complex issues relating to medical gas pipeline systems
- Demonstrate self-direction, initiative and autonomy in research and scholarship towards solutions to organisational problems in the role of Authorising Engineer and the field of medical gas pipeline systems
- Critically evaluate proposed solutions to operational problems.

3 Teaching, Learning and Assessment

The EduQual Diploma in Medical Gas Pipeline Systems: Authorising Engineer (SCQF Level 11) is designed for Learners who have gained a considerable degree of subject knowledge and proficiency from undergraduate studies, experience within the workplace, or both.

Tuition and guidance should feature flexible approaches to delivering and assessing the Qualification, which may include face to face or online tuition/learning sessions. Additionally or alternatively, Learners may have access to a virtual learning platform as part of a blended learning programme of study and synchronous and asynchronous sessions with course tutors and tutor-led/moderated group discussions. The virtual learning platform may include formative tests with support and feedback.

Practising Authorising Engineers are required to evidence competency wherever appropriate by submission of a comprehensive, authoritative, and verifiable Professional Practice Portfolio across all assessment criteria within the programme of study.

Evidence must be submitted according to the guidance provided and meet the requirements for navigation, length, and content. Portfolios will be assessed by an experienced and practising Authorising Engineer and moderated by a second experienced and practicing Authorising Engineer.

Essential resources for this Unit include access to experienced tutors and instructors including practising Authorising Engineers (MGPS) and a safe and controlled MGPS environment with teaching/demonstration facilities.

Learners are encouraged to apply knowledge and to demonstrate a critical awareness of problems in the role of Authorising Engineer and the field of medical gas pipeline systems. Learners are also expected to use the results of current and recent research and case studies to analyse, evaluate and appraise established methods, practices or techniques.

Assessment strategies have been designed to promote strong practical and professional orientation and to enable Learners to develop a range of practical skills in the role of Authorising Engineer and the field of medical gas pipeline systems. Work-based assignments are used where relevant and practical in order to help Learners:

- relate their learning to their work environment
- increase their knowledge of that environment
- synthesise ideas in application
- communicate outcomes to others in different situations relating to the role of Authorising Engineer and the field of medical gas pipeline systems
- raise their profile and ensure that employers gain immediate practical benefit
- access increased employability/progression opportunities.

Learning and assessment for knowledge and understanding outcomes may be measured during the performance and assessment of relevant skills.

NOTE For EduQual Approved Centres:

The above reflects a mixture of learning and assessment approaches which may take place at the Centre, in the work place, in simulated environments and possibly again at the Centre to verify overall outcomes.

For example, the Centre's responsibilities do not end when any initial Centre-based training is completed, and the Learner then begins to collect evidence from the workplace. The Centre owns the overall learning and assessment process, and must ensure that experiences gained in the workplace are realistic, relevant to the appropriate Learning Outcomes, and subjected to valid, authoritative assessments. This may require sampling of such assessments as they occur. Certainly there must be a final and overall assessment session, conducted by the Centre, to ensure all standards have been met.

At that stage, only the Centre can then initiate the process for certification with EduQual.

4 Entry Requirements

Prospective Learners for this Qualification are expected to have:

- an SCQF Level 8 / RQF Level 5 Qualification in a healthcare subject (such as MGPS: Authorised Person), or
- a Scottish Higher / GCE A Level profile that shows strong performance in relevant subjects, or
- an equivalent international Qualification to the above, **and**
- at least two years' relevant MGPS work experience

OR

- five years' operational MGPS work experience and evidence of ability to study at graduate level

5 Recognition of Prior Learning (RPL)

RPL (sometimes referred to as APL) may be claimed by a Learner in situations where:

- The Learner has already studied SCQF/RQF equivalent Level 11/7 Units that meet the Learning Outcomes of one or more Units of this Qualification[1]
- The Learner can also produce evidence to demonstrate how each of the assessment criteria of those Learning Outcomes have already been met.

In such a case, those matching Units can be exempted from study, credits can be claimed and the evidence supporting the RPL claim must be included in the Learner's portfolio of evidence when claiming the EduQual Award.

[1] Such RQF Level 7/SCQF Level 11 units may be regulated/accredited by any UK regulatory authority for qualifications: for example, Ofqual or SCQF.

6 Progression

Learners completing the EduQual Diploma in Medical Gas Pipeline Systems: Authorising Engineer (SCQF Level 11) will be able to access increased employability/progression opportunities.

7 Qualification size

EduQual Qualifications define the credit values for each Unit and the whole Qualification. One credit roughly equals 10 learning hours which allows the Learners to evaluate how much time they will need to gain the desired Qualification.

Credit values define a Qualification's Total Qualification Time (TQT), which includes all the time needed to gain a Qualification, including:

- Formal input (including contact time with tutor – the Guided Learning Hours (GLH)), for example:

  Teaching and learning including any directed online learning

- Additional activities (e.g. developing practice, reflection, research/study time), for example:

  Pre/during course reading

  Work-based experience and assessment of skills training/application at other sites e.g.at a hospital

  Compiling portfolios of evidence/maintaining activity logs

- Assessment, for example:

  Preparing for and taking of assessment, whether assessment is practical or theory (e.g. a test/exam)

The TQT value is for the time typically taken by a cohort of Learners to achieve their Qualification and that should reflect any pre-existing knowledge within that cohort.

To gain an EduQual Award, it is necessary to have 1 to 12 credit points which equals 10 to 120 hours of learning. Learners who have 13 to 26 credits (130 to 260 hours) are awarded EduQual Certificates, while those who have 37 credits or more are awarded EduQual Diplomas.

8 Curriculum

The EduQual Diploma in Medical Gas Pipeline Systems: Authorising Engineer (SCQF Level 11) is an RQF equivalent Level 7 Qualification. The Qualification consists of 8 Units, all of which are compulsory, as shown:

EduQual Diploma in Medical Gas Pipeline Systems: Authorising Engineer (SCQF Level 11) Compulsory Units		
Unit Title	**SCQF Level**	**Credits**
Unit 1: Critical Literary Review	11	6
Unit 2: The Legislative Framework for Medical Gas Pipeline Systems	11	3
Unit 3: Contract and Document Management	11	5
Unit 4: Design, Specification, Review and Validation	11	11
Unit 5: Compliance Audit and Reporting	11	5
Unit 6: Monitor Operational Policy	11	5
Unit 7: Teaching, Learning and Assessment In The Work Environment	11	5
Unit 8: Professional Practice Portfolio Authorising Engineer (AE)	11	10
	Total Credits	**50**

9 National Occupational Standards (NOS)

The table below maps the knowledge covered in the EduQual Diploma in Medical Gas Pipeline Systems: Authorising Engineer (SCQF Level 11) against the underpinning knowledge of Units from the National Occupational Standards for Skills for Health (2010).

MGPS AE Unit Title	Credits	NOS Units
Unit 1: Critical Literary Review	6	
Unit 2: The Legislative Framework for Medical Gas Pipeline Systems	3	SEMETS356, SFHGEN98, SFHGEN92, SFHFGEN210, SFHCHS207, SFHBEN96, SFHCHS203
Unit 3: Contract and Document Management	5	SEMETS356, SFHGEN98, SFHGEN92, SFHFGEN210, SFHCHS207, SFHBEN96, SFHCHS203
Unit 4: Design, Specification, Review and Validation	11	SEMETS356, SFHGEN98, SFHGEN92, SFHFGEN210, SFHCHS207, SFHBEN96, SFHCHS203
Unit 5: Compliance Audit and Reporting	5	SEMETS356, SFHGEN98, SFHGEN92, SFHFGEN210, SFHCHS207, SFHBEN96, SFHCHS203
Unit 6: Monitor Operational Policy	5	CFABAA1110, SEMETS356, SFHGEN98, SFHGEN92, SFHFGEN210, SFHCHS207, SFHBEN96, SFHCHS203
Unit 7: Teaching, Learning and Assessment In The Work Environment	5	SFHGEN23, CLDLD04, CLDLD02, CLDLD03, CLDLD05, CLDLD07, CLDLD08, CLDLD09, CLDLD10, CLDLD13, SFHGEN98, SFHBEN96
Unit 8: Professional Practice Portfolio Authorising Engineer (AE)	10	SEMETS356, SFHGEN98, SFHGEN92, SFHFGEN210, SFHCHS207, SFHBEN96, SFHCHS203

10 Learning/teaching methods and strategies

The Learning Outcomes will be achieved by the use of the following learning and teaching methods and strategies:
• A variety of teaching and learning strategies, including lecture, seminar, case study and video.
• Team teaching on specific modules to foster integration between various aspects of medical gas pipeline systems and the role of Authorising Engineer
• A strong emphasis on syndicate work in which professional practice can be shared and exchanged.
• Guest lectures from leading edge practitioners at senior level within medical gas pipeline systems and the role of Authorising Engineer
• Directed private study, including reading authoritative quality texts and articles, and researching appropriate data using the internet.
• Personal and professional critical self-reflection, including feedback from colleagues and superiors.
• The creation of a learning environment that fosters debate and constructive argument.
• Units which encourage Learners to critically assess theory and leading-edge practice, with a view to creating new concepts and practices for the future.
• Practical projects which foster originality of thought and enterprise.
• Exercises which develop critical thinking in the field of medical gas pipeline systems and the role of Authorising Engineer

11 Delivery and Assessment Guidance

Assessment of Learner evidence

Evidence for Learning Outcomes should include assessments carried out in a work environment. As a minimum, there must be performance evidence using the following assessment methods:

- observation of performance in the work environment
- examining products of work
- questioning the Learner

Other forms of evidence will be acceptable for the remaining assessment methods:

- discussing with the Learner
- use of others (witness testimony)
- looking at Learner statements
- recognising prior learning

Simulation: Learners and assessors may use a simulated replica of the work environment in which to assess competence, provided that it is not possible or that it is unsafe for the Learner to practice or demonstrate competence in a real-life work environment.

Assessment guidance (as stated in the Unit specifications) requires a combination of assessment methodologies. EduQual can provide advice to Centres on such combinations as required. All assessment tools must be endorsed by EduQual before use and as a necessary part of the approval process.

Occupational competence

EduQual's MGPS tutors and assessors must be able to demonstrate occupational competence, with sufficient knowledge and understanding of the field of MGPS operations to be able to make sound, valid and quantifiable judgements about the knowledge, skills and understanding of MGPS operations that Learners are seeking to demonstrate. Normally the combination of Qualifications and experience of the tutor/assessor would be at least one level higher than for the Qualification/course which is being delivered and assessed.

Additionally, Centres will need to appoint a quality assurer to carry out quality assurance of Learners' evidence. Centres need to ensure that they have processes, procedures and resources in place to ensure the integrity and quality of Learner's evidence.

Ideally, assessors and internal quality assurers should be qualified as an Authorised Person (to assess and/or quality assure Learners working towards the role of Competent Person) or as an Authorising Engineer (to assess and/or quality assure Learners working towards the role of Authorised Person).

Otherwise, they should have a minimum of two years of work experience in the field of MGPS: ensuring that that medical gas used through pipeline systems are handled, stored, administered, and maintained safely.

Assessors and quality assurers **MUST NOT** be the same person to assess or quality assure the same Learner's evidence.

MGPS assessors and quality assurers for EduQual MGPS Qualifications must be approved by EduQual before undertaking assessment roles.

Holistic assessment

Holistic assessment is an approach that enables assessors to focus on several aspects of a Qualification or Unit at the same time, in a single assessment opportunity. The holistic approach involves planning assessment around what the Learner is doing, then linking these activities to the assessment criteria. This approach is particularly effective in the working environment.

Assessors and Learners can therefore develop assessment plans that enable elements of assessment from different Units to be evaluated at the same time, using different methodologies such as observation of performance in the work environment, examining products of work, and questioning the Learner. Assessors need to find the right balance of practical and theory aspects. This approach makes collecting evidence and assessing a Learner's skill, knowledge and understanding quicker and more efficient.

Witness testimony

Witness testimonies can be obtained from people that are occupationally competent and who may be familiar with the assessment criteria and relevant standards of a particular Qualification, such as the Learner's line manager or training manager. They may also be obtained from people who, whilst not deemed competent (in terms of the performance they are observing/have observed), are sufficiently experienced to comment on the transferable skills demonstrated by Learners, e.g. problem solving, resolution, or teamwork, which can contribute to the overall evidence of achievement available.

Expert witnesses may be line managers, supervisors, other managers or experienced colleagues who are not approved assessors, but who the EduQual Centre agrees have current occupational competence, knowledge and expertise to make a judgment on a Learner's evidence.

Expert witnesses must be able to demonstrate through relevant Qualifications, practical experience and knowledge that they are qualified to provide an expert opinion on a Learner's evidence or performance in relation to the Unit being assessed. Whilst an expert witness can 'sign off' elements of a Learner's evidence (such as Learner's development of specific practical skills, in the workplace), the final judgment on the validity of the expert witness testimony rests with individual assessors.

The assessor must judge the validity and weight of the witness testimony and the judgement may vary depending on the source. Witness testimonies can only support the assessment process and may or may not remove or reduce the need to collect supplementary evidence. **Assessment of occupational competence cannot be based solely on witness testimony.**

Currency of regulations and legislation

Regulations and legislation frequently change, and published specifications may appear to become outdated. Centres must ensure that they and their Learners are responding to the latest in MGPS practice, regulation and legislation.