SIAS Qualification Specification

SIAS Level 2 Award in the Introduction to Hydrogen Production

Qualification Number: 610/6301/0

Operational Start Date: 1st September 2025

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Version History

This is a live document and as such will be updated when required. It is the responsibility of the approved centre to ensure the most up-to-date version of the Qualification Specification is in use.

Version	Date	Comments
1.0	01/09/2025	First published

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Introduction

Welcome to SIAS

SIAS is an Awarding Organisation regulated in England by the Office of Qualifications and Examinations Regulation (Ofqual) and in Northern Ireland by the Council for Curriculum, Examination and Assessment Regulation (CCEA Regulation).

We exist to drive positive change, and across STEM industries globally, we empower learners to achieve their full potential.

As the leading Awarding Organisation for the technical science, manufacturing, engineering and low carbon sectors, we are disrupting through innovative and collaborative approaches.

Our mission is to deliver transformational experiences and solutions that support the skills agenda.

Feedback

Customer experience and feedback is very important to us. We're always open to suggestions when it comes to enhancing and improving our services. If you have any comments or feedback on our services or products, please contact our team at info@siasuk.com or call us on 01925 515211.

About this Specification

This document has been developed to provide information for learners and centres undertaking, delivering or quality assuring this qualification.

Centre Recognition and Qualification Approval

To deliver this qualification, the centre must be recognised by SIAS.

Recognised centres must apply for approval for each qualification they intend to offer. Qualification approval must be obtained prior to conducting any learner assessments.

For details of our centre recognition and qualification approval process, visit our website or contact us at info@siasuk.com.

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About this Qualification

Key Facts

Qualification Title	SIAS Level 2 Award in the Introduction to Hydrogen Production
Qualification Number	610/6301/0
Guided Learning Hours (GLH)	18
Total Qualification Time (TQT)	24
Assessment Methods	Multiple-Choice Question Examination
Operational Start Date	1st September 2025
Review Date	31st August 2028
Operational End Date	-
Certification End Date	-
Regulation	This qualification is regulated by Ofqual

Qualification Objective

The SIAS Level 2 Award in the Introduction to Hydrogen Production aims to equip learners with foundational knowledge and understanding of hydrogen production processes, safety procedures, and quality assurance principles. This qualification develops learners' awareness of hydrogen classifications, production methods, regulatory frameworks, and operational controls. It also prepares learners to contribute safely and effectively within hydrogen production environments by recognising hazards, following safety protocols, and supporting quality monitoring and continuous improvement to ensure safe, efficient, and compliant hydrogen production.

Entry Requirements

This qualification is available for learners aged 16+.

Learners must have achieved the SIAS Level 2 Award in the Introduction to Hydrogen Safety or an equivalent qualification prior to enrolling.

Centres should take reasonable steps to ensure learners are able to complete this qualification, for example by carrying out an initial assessment to confirm they can work at the appropriate level.

Recognition of Prior Learning

Recognition of Prior Learning (RPL) is the process of recognising previous, informal or experiential learning which could contribute to a qualification or unit. SIAS supports the use of RPL, and centres must work to the principles included in the SIAS RPL Policy which is available on the SIAS website. This policy should be reviewed alongside this specification and all other relevant SIAS qualification documentation.

Qualification Structure

To be awarded the SIAS Level 2 Award in the Introduction to Hydrogen Production learners must achieve the following.

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- All mandatory units listed in the table below.

Ofqual Unit reference	Unit title	Level	GLH	TQT
T/651/7629	Unit 1: Introduction to Hydrogen Production Processes	2	6	8
D/651/7630	Unit 2: Safety Procedures in Hydrogen Production	2	5	7
F/651/7631	Unit 3: Process Control and Quality Assurance in Hydrogen Production	2	7	9
TOTAL			**18**	**24**

Total Qualification Time (TQT) and Guided Learning Hours (GLH)

Note: Values for Total Qualification Time, including Guided Learning Hours, are calculated by considering the different activities that learners would typically complete to achieve and demonstrate the learning outcomes of a qualification. They do not include activities which are required by a learner's teacher based on the requirements of an individual learner and/or cohort. Individual learners' requirements and individual teaching styles mean there will be variation in the actual time taken to complete a qualification. Values for Total Qualification Time, including Guided Learning, are estimates.

Some examples of activities which can contribute to Total Qualification Time include:

- independent and unsupervised research/learning
- unsupervised compilation of a portfolio of work experience
- unsupervised e-learning
- unsupervised e-assessment practice
- unsupervised coursework
- watching a pre-recorded podcast or webinar
- unsupervised work-based learning
- all Guided Learning

Some examples of activities which can contribute to Guided Learning include:

- classroom-based learning supervised by a teacher.
- work-based learning supervised by a teacher.
- live webinar or telephone tutorial with a teacher in real time.
- e-learning supervised by a teacher in real time.
- all forms of assessment which take place under the immediate guidance or supervision of a lecturer, supervisor, tutor or other appropriate provider of education or training, including where the assessment is competence-based and may be turned into a learning opportunity.

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Grading

This qualification is graded as a pass/fail.

Delivery and Assessment

Geographical Coverage

This qualification is regulated in England.

Use of Language

All learners must be assessed in English unless the qualification specification states that another language will be accepted.

Progression Opportunities

Upon successfully completing this qualification, learners may wish to progress into further development and training in hydrogen technologies and safety.

Assessment Guidance

All SIAS assessments will be accessible and produce results that are valid, reliable, transparent and fair.

The SIAS Level 2 Award in the Introduction to Hydrogen Production contains 3 mandatory knowledge units.

Unit No.	Unit title
1	Introduction to Hydrogen Production Processes
2	Safety Procedures in Hydrogen Production
3	Process Control and Quality Assurance in Hydrogen Production

To achieve the qualification, learners must successfully pass one externally set and marked Multiple Choice Question (MCQ) examination covering the 3 mandatory units as detailed in the below table:

Component	Set by	Marked by	Assessment Method	Pass Requirement	Grading
Unit 1	SIAS	SIAS	11 MCQs	Minimum 6/11 correct	Pass/Fail
Unit 2	SIAS	SIAS	8 MCQs	Minimum 5/8 correct	Pass/Fail
Unit 3	SIAS	SIAS	11 MCQs	Minimum 6/11 correct	Pass/Fail
Overall Award	**SIAS**	**SIAS**	**One MCQ examination** (30 questions across all units)	All units must be passed **and** a minimum of 21/30 overall	**Pass/Fail**

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Time Allowed: Learners have 50 minutes in total to complete the examination.

The examination is available online through the SIAS secure XAMS platform. The examination can also be paper based. For any queries, please contact us at

info@siasuk.com.

The assessment must be undertaken in controlled conditions. This means:

- learners must complete the assessment unaided
- books and other training aids must not be accessed by the learners.
- all assessments must be invigilated to maintain authenticity and security.

All assessment results will be subject to moderation and monitoring by SIAS to ensure standards are maintained and outcomes remain fair and consistent.

Centres should have systems in place to verify a learner is ready to undertake their assessment.

Centres must ensure that no part of the assessment process, including invigilation or internal quality assurance is conducted by anyone with a personal interest in the assessment outcome.

Learners who do not achieve a pass will be permitted to retake the assessment up to two times. A resit may only be undertaken for an assessment that has previously been failed.

Documentation to support the qualification assessment process can be accessed from the SIAS Pinacle system.

ID requirements

It is the responsibility of the centre to have systems in place to ensure that the person taking an assessment is the person they are claiming to be. All centres are therefore required to ensure that each learner's identification is checked before they undertake the assessment.

SIAS recommends the following as proof of a learner's identity:

- a valid passport (any nationality)
- a photocard driving licence
- another photographic ID card, e.g. employee ID card, student ID card, travel card etc.

Centre Requirements

All SIAS centres must be approved by SIAS to deliver the qualification(s) they wish to offer. This is to ensure centres have the processes and resources in place to deliver the qualification(s). Further information can be found in the SIAS Centre Handbook.

When a centre applies to offer a qualification, they will need to provide evidence that they have sufficient resources and infrastructure in place for delivery of that qualification:

- evidence of staff competence and knowledge

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- details of available resources.

Information regarding the induction and continuing professional development must be made available to SIAS by centres through the external quality assurance process.

Tutor/Trainer Requirements

For the SIAS Level 2 Award in the Introduction to Hydrogen Production, tutors/trainers are required to demonstrate they:

- have relevant occupational knowledge and competence
- hold a recognised education and training qualification or equivalent training experience
- have completed recent, relevant CPD activities for the subject area.

Evidence includes:

- CV and relevant occupational qualifications and experience.
- Up-to-date CPD Record including certification from any courses attended.

SIAS recommends that as best practice for tutors/trainers to hold or be working towards a relevant education and training qualification. These include:

- Level 3 Award in Education and Training or equivalent including Preparing to Teach in the Lifelong Sector (PTLLS), CertEd/PGCE, L4 Certificate in Education and Training, L5 Diploma in Education and Training.

Where this is not the case, SIAS will look at alternative sources of evidence for training competence, such as professional qualifications, relevant work experience or internal training records. For further guidance, please contact us.

Continuing Professional Development (CPD)

Centres are expected to support their staff, ensuring that their subject knowledge remains current and is up to date with best practice.

Quality Assurance Guidance

All SIAS qualifications require centres to have in place a robust mechanism for the quality assurance of training delivery and invigilated assessment arrangements.

External Quality Assurance

External quality assurance will be undertaken by SIAS. Centres will be required to provide documentation and other evidence to support this process upon request. Please refer to our Centre Handbook for further details.

Equality and Diversity

Delivery of SIAS qualifications must comply with equality and diversity legislation. Learners should not experience any barriers to achievement in respect of:

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- Age
- Disability
- Gender
- Gender reassignment
- Marriage and civil partnerships
- Pregnancy and maternity
- Race
- Religion and belief
- Sexual orientation.

Reasonable Adjustments

All learners must be treated fairly and equally and be provided with every opportunity to achieve our qualification(s). For more information or guidance, please refer to the SIAS Reasonable Adjustments Policy available on our website.

Health and Safety

SIAS are committed to ensuring the safety and wellbeing of learners. Due to the nature of some of the sectors SIAS work in, there can be a high level of risk which we expect centres to manage effectively. Centres must take appropriate measures to assess and manage these risks and implement procedures so that qualifications are delivered safely, minimising risks to learners and those involved in the assessment process as much as possible. Working environments must comply with all required health and safety standards.

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Qualification Content

Unit 1: Introduction to Hydrogen Production Processes

Unit Reference	T/651/7629
Level	2
GLH	6
Aim	The aim of this unit is to introduce learners to the hydrogen production process, focusing on the types and classifications of hydrogen, production methods, safety considerations, and the relationship between hydrogen and the environment.
Assessment Methodology	Multiple-choice examination

Learning Outcomes *The learner will:*	**Assessment Criteria** *The learner can:*	
1. Know the main types and classifications of hydrogen.	1.1	Identify the main classifications of hydrogen.
	1.2	Recognise how grey hydrogen is produced using fossil fuels.
	1.3	Recognise how blue hydrogen is produced.
	1.4	Recognise how green hydrogen is produced.
2. Know the key equipment used in hydrogen production.	2.1	Identify key equipment used in hydrogen production.
3. Know the advantages and limitations of different hydrogen production methods.	3.1	State the advantages and limitations of different hydrogen production methods.
4. Know the purpose of carbon capture in hydrogen production.	4.1	State the purpose of carbon capture and how it reduces emissions in hydrogen production.
5. Understand regulatory requirements for hydrogen production.	5.1	Identify relevant legal and regulatory standards for hydrogen production.
	5.2	Recognise the difference between UK process law and international law in relation to hydrogen production.

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Unit 2: Safety Procedures in Hydrogen Production

Unit Reference	D/651/7630	
Level	2	
GLH	5	
Aim	The aim for this unit is to equip learners with the knowledge of safety procedures and risk management in hydrogen production, ensuring they can operate safely within the production environment.	
Assessment Methodology	Multiple-choice examination	
Learning Outcomes *The learner will:*	**Assessment Criteria** *The learner can:*	
1. Understand safety procedures required in hydrogen production.	1.1	Identify the safety measures required for producing hydrogen.
	1.2	State the roles and responsibilities of workers in maintaining safety during hydrogen production.
2. Understand risk management in hydrogen production.	2.1	Identify potential risks and hazards during hydrogen production.
	2.2	Identify risk assessment procedures for hydrogen production environments.
	2.3	Identify typical risk mitigation measures used in hydrogen production environments.
3. Understand the importance of personal protective equipment (PPE) for safe hydrogen production.	3.1	Identify types of PPE required for safe hydrogen production.
	3.2	Identify relevant standards and regulations relating to PPE used in hydrogen production.

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Unit 3: Process Control and Quality Assurance in Hydrogen Production

Unit Reference	F/651/7631
Level	2
GLH	7
Aim	The aim of this unit is to introduce learners to the key principles of process control and quality assurance in hydrogen production. It covers how production is monitored, how quality is measured and maintained, and how processes can be improved to ensure consistent and efficient output.
Assessment Methodology	Multiple-choice examination

Learning Outcomes *The learner will:*	**Assessment Criteria** *The learner can:*	
1. Understand the principles of process control in hydrogen production.	1.1	Identify key control processes involved in hydrogen production.
	1.2	Recognise how process control systems ensure efficiency in hydrogen production.
2. Understand the role of quality assurance in hydrogen production.	2.1	Identify the role of quality assurance in hydrogen production.
	2.2	Identify the methods used to measure and monitor the quality of hydrogen produced.
	2.3	State how quality assurance is integrated into hydrogen production processes.
	2.4	Recognise the importance of documenting information.
3. Understand how to maintain and improve product quality during production.	3.1	Identify operational parameters that affect hydrogen production quality and efficiency.
	3.2	Identify how adjusting operational parameters can optimise hydrogen production.
	3.3	List the methods for implementing improvements to the production process.

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Resources

SIAS provides the following additional resources for this qualification:

- Centre Qualification Guide
- Qualification Learner Logbook
- Externally Set Assessments.

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Appendix 1: Specimen Assessment

Specification for the SIAS-set, SIAS-marked Multiple Choice Question Examination.

Number of Questions	**30 questions covering 3 mandatory units.** Unit 1: 11 questions Unit 2: 8 questions Unit 3: 11 questions
Time Allowed	50 minutes
Pass Criteria	Unit 1: A minimum of 6 correct answers out of 11 Unit 2: A minimum of 5 correct answers out of 8 Unit 3: A minimum of 6 correct answers out of 11 **Overall pass mark: 21 out of 30**
Grading	Pass or Fail

Sample questions:

Sample Question 1
In a hydrogen production system, what is the primary role of a tank used after production is complete?
A. To store hydrogen gas safely for future use.
B. To regulate the flow of hydrogen.
C. To transfer heat between fluids.
D. To compress the hydrogen gas.

Sample Question 2
What does the "bow-tie" shape in Bow-Tie analysis symbolise?
A. The lifecycle of a hydrogen production system.
B. The interaction between hazards and consequences.
C. The convergence of multiple hazards into a single event.
D. The relationship between preventative and recovery barriers.

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Further Information

For information about SIAS and general enquiries please see our website: www.siasuk.com or contact:

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