

Draft National Unit Specification



Unit title: Researching Chemistry (Advanced Higher) Unit

SCQF: level 7 (8 SCQF credit points)

Unit code: to be advised

Unit outline

The general aim of this Unit is to develop skills of scientific inquiry, investigation, analytical thinking, independent working, and knowledge and understanding of researching chemistry. This can be done using a variety of approaches, including investigation and problem solving. The Unit offers opportunities for independent learning set within the context of experimental chemistry. Learners will develop skills of planning, experimental design and analysis of recorded data.

The Unit covers the key areas of gravimetric analysis, volumetric analysis and practical skills and techniques.

Learners will research issues and apply scientific skills, which will develop skills of scientific literacy.

Learners who complete this Unit will be able to:

- 1 Draw on knowledge and understanding of the key areas of this Unit and apply scientific skills
- 2 Apply skills of scientific inquiry and draw on knowledge and understanding to research, plan and carry out investigative practical work on a chosen chemistry topic

This Unit is a mandatory Unit of the Advanced Higher Chemistry Course and is also available as a free-standing Unit. The Unit Specification should be read in conjunction with the *Unit Support Notes*, which provide advice and guidance on delivery, assessment approaches and development of skills for learning, skills for life and skills for work. Exemplification of the standards in this Unit is given in the *National Assessment Resource*.

The *Course Assessment Specification* for the Advanced Higher Chemistry Course gives further mandatory information on Course coverage for learners taking this Unit as part of the Advanced Higher Chemistry Course.

Recommended entry

Entry to this Unit is at the discretion of the centre. However, learners would normally be expected to have attained the skills, knowledge and understanding required by one or more of the following or equivalent qualifications and/or experience:

- ◆ Higher Chemistry Course or relevant component Units

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. For further information, please refer to the *Unit Support Notes*.

Standards

Outcomes and assessment standards

Outcome 1

The learner will:

- 1 Draw on knowledge and understanding of the key areas of this Unit and apply scientific skills by:**
 - 1.1 Explaining a practical technique, including its application
 - 1.2 Evaluating the uncertainties of a practical technique
 - 1.3 Completing a calculation of elemental analysis

Outcome 2

The learner will:

- 2 Apply skills of scientific inquiry and draw on knowledge and understanding to research, plan and carry out investigative practical work on a chosen chemistry topic by:**
 - 2.1 Gathering and recording information from sources
 - 2.2 Planning/designing the practical investigation, including assessment of risk and safety measures
 - 2.3 Carrying out the practical work safely, recording results/data appropriately

Evidence Requirements for the Unit

Assessors should use their professional judgement, subject knowledge and experience, and understanding of their learners, to determine the most appropriate ways to generate evidence and the conditions and contexts in which they are used.

Evidence can be drawn from a variety of sources and presented in a variety of formats. Evidence may be presented for individual Outcomes or gathered for the Unit as a whole through combining assessment holistically in a single activity. If the latter approach is used, it must be clear how the evidence covers each Outcome.

Exemplification of assessment is provided in the *National Assessment Resource*. Advice and guidance on possible approaches to assessment is provided in the *Unit Support Notes*.

Development of skills for learning, skills for life and skills for work

It is expected that learners will develop broad, generic skills through this Unit. The skills that learners will be expected to improve on and develop through the Unit are based on SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work* and drawn from the main skills areas listed below. These must be built into the Unit where there are appropriate opportunities.

1 Literacy

1.2 Writing

2 Numeracy

2.1 Number processes

2.2 Money, time and measurement

2.3 Information handling

5 Thinking skills

5.3 Applying

5.4 Analysing and evaluating

5.5 Creating

Amplification of these is given in SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work*. The level of these skills should be at the same SCQF level as the Unit and be consistent with the SCQF level descriptor. Further information on building in skills for learning, skills for life and skills for work is given in the *Unit Support Notes*.

Administrative information

Published: October 2012 (draft version 1.0)

Superclass: to be advised

History of changes to National Unit Specification

| Version | Description of change | Authorised by | Date |
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Note: readers are advised to check SQA's website: www.sqa.org.uk to ensure they are using the most up-to-date version of the Unit Specification.