Advanced Higher Unit Specification

Statistics: Hypothesis Testing (Advanced Higher) Unit

SCQF: level 7 (8 SCQF credit points)

Unit code: H7VT 77

Unit outline

The general aim of this Unit is develop and apply skills in hypothesis testing. These tests will be parametric, non-parametric and bivariate. Learners will develop skills in effectively communicating conclusions reached on the basis of statistical analysis. A statistical investigation (using a statistical hypothesis test) generated by the learner will be carried out using the skills developed in the Unit.

Learners who complete this Unit will be able to:

1 Use statistical skills linked to hypothesis testing
2 Carry out a statistical investigation

This Unit is a mandatory Unit of the Advanced Higher Statistics Course and is also available as a free-standing Unit. The Unit Specification should be read in conjunction with the *Course/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 *Unit Assessment Support*.

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

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 *Course*/*Unit Support Notes.*

Standards

Outcomes and assessment standards

Outcome 1

The learner will:

1 Use statistical skills linked to hypothesis testing by:

1.1 Applying skills to parametric tests
1.2 Applying skills to non-parametric tests
1.3 Applying skills to bivariate tests

Outcome 2

The learner will:

2 Carrying out a statistical investigation by:

2.1 Specifying the problem and planning the investigation
2.2 Selecting relevant data
2.3 Presenting and analysing the data
2.4 Communicating the conclusion

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. They should ensure there is sufficient evidence of competence in mathematical skills from the Outcomes and Assessment Standards to allow a judgement to be made that the learner has achieved the Unit.

Assessors should use their professional judgement when giving learners credit for an appropriate degree of accuracy. This may mean giving credit for incomplete solutions or numerically incorrect solutions which show correct methodology, therefore demonstrating required knowledge and understanding of the mathematical processes involved.

A calculator or equivalent technologies may be used.

For **Outcome 1**, learners will be required to provide evidence for each Assessment Standard linked by drawing on the following:

Skills appropriate to application (1.1)

- Identifying and performing an appropriate one sample test for the population mean and proportion
- Identifying and performing an appropriate two sample test (independent or paired data) for comparing population means and proportions

Skills appropriate to application (1.2)

- Identifying and performing an appropriate test for population median/s
- Identifying and performing an appropriate chi-squared test

Skills appropriate to application (1.3)

- Identifying and performing an appropriate hypothesis test on bivariate data

For **Outcome 2**, learners will be required to provide evidence covering each stage of the investigation. Evidence is required of one statistical investigation for a practical situation.

Exemplification of assessment is provided in *Unit Assessment Support*. Advice and guidance on possible approaches to assessment is provided in the *Course*/*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.

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

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 *Course*/*Unit Support Notes.*

Administrative information

Published: April 2015 (version 2.0)

Superclass: RB

History of changes to National Unit Specification

Version	Description of change	Authorised by	Date
2.0	Outcome 2 and Assessment Standards 2.1, 2.2 and 2.3 amended. Evidence Requirements relating to Outcome 1 amended.	Qualifications Development Manager	April 2015